THE

AGRICULTURAL ADVISORY DEPARTMENT

IMPERIAL COLLEGE OF TROPICAL AGRICULTURE.

IMPERIAL MYCOLOGICAL INSTITUTE
2 JAN 1939

REPORT

ON THE

Agricultural Department

ST. KITTS-NEVIS

1937.

ISSUED BY

THE COMMISSIONER OF AGRICULTURE.

1938

[Price Sixpence.]

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Cotton Inspector and Land Officer, Nevis ..	C. Wilson.

Letter of Transmittal.

CCS/JF.

29th August, 1938.

C.A.1009/38.

Sir,

I have the honour to transmit the annual report on the work of the Agricultural Department for the year 1937.

2. The total export value of the products of agricultural and related industries amounted to £368,555 in 1937, an increase of nearly 27 per cent over the corresponding figure for 1936. This increase was almost entirely due to the increased production and export of sugar, and to the slightly better price obtained for sugar in the 1937 season.

3. Production of sugar in St. Kitts in the crop of 1937 amounted to 34,260 tons, constituting a record for the Island and being 20 per cent more than the previous record crop in 1935. There was a slightly larger area of cane reaped in 1937 than in any previous year, but the yield of cane, viz: 28.41 tons per acre, was also the highest yield on record. Favourable weather conditions during the growing season were an important contributing factor to the production of this crop, but the importance as a contributing factor of the greater efficiency of the industry, particularly in recent years as the result of scientific invesigation in the field, must now also be recognised.

4. The success of the Sea Island cotton industry in 1936 encouraged growers to extend the acreage under cotton to 4,168 acres in 1937, approximately 30 per cent more than the previous year. But owing to unfavourable weather conditions total production amounted to only 448,019 pounds lint, about 8 per cent less than the previous year. The incidence of pink bollworm remains fairly high, especially in Nevis, and every effort should be made to carry out to the fullest possible extent the recommendations for the control of the pest made by Mr. F. A. Squires, Entomologist, Cotton Pest Investigation.

5. The St. Kitts Sea Island Cotton Growers' Association Limited was registered during the year under the Companies Act of the Leeward Islands and was admitted to membership of the West Indian Sea Island Cotton Association (Incorporated) at the ordinary general meeting of the latter Association in November, 1937.

6. In the Island of Nevis rainfall distribution was unsatisfactory and the standard of agricultural production of the previous year was not reached. Unusually heavy rains in January 1937 had a disastrous effect on the cotton crop, the most important crop of the Island. There was a marked increase in the number of livestock exported, but, in general, the markets for Nevis livestock are gradually shrinking.

7. The Island of Anguilla experienced severe drought conditions throughout the year except in the month of January. All agricultural production was seriously affected by the drought. The cotton crop planted in August 1936 was adversely affected in January 1937 by the only wet period of the year. Moreover great difficulty was experienced in establishing the cotton crop in 1937 owing to severe and prolonged dry conditions.

8. The scheme of sugar cane investigational work conducted in co-operation with the Sugar Cane Investigation Committee of St. Kitts under the direction of Mr. P. E. Turner, Sugar Cane Adviser to the Commissioner of Agriculture, was continued during the year and satisfactory progress can be claimed. Indeed the better cultural and manurial practices already adopted, as well as

the economic use of additional upper lands, resulting from the findings of the experimental investigation, have played an important part in the increased production of cane. Moreover, there is every reason to expect that a higher standard of sugar cane agricultural practice and a higher average annual production of sugar will, in consequence, be maintained in future years.

9. The work involved in carrying out the programme of experiments under the investigational scheme constitutes the major function of the Agricultural Department in St. Kitts. During the year the experiments covered a wide range and included varietal, cultural and manurial trials. It has been established that B.2935 is a much more satisfactory variety for the dry areas than the former standard variety S.C.12(4). The value of mulching to minimise the effects of drought has again been demonstrated. Further, convincing evidence has been obtained that large increases in yield can result from extensive use of inorganic manures, and that by the appropriate use of such manures paying yields of cane can be obtained on areas previously considered insufficiently fertile for sugar cane cultivation.

10. The soil survey of the upper sugar cane lands of St. Kitts was continued during the year and the analytical results are recorded in the report.

11. No investigational work has yet been undertaken by the Agricultural Department on the problem of soil conservation. It is fortunate that in St. Kitts where natural conditions favour rapid soil erosion, the nature of the crop namely sugar cane, and the methods of cultivation in general practice favour soil conservation. But the necessity still exists for the introduction and general application of more specific anti-erosion measures and it seems probable that such measures could be economically included in the present system of agriculture with very useful results. In Nevis, by reason of different soil conditions and agricultural methods, the problem is somewhat different from that in St. Kitts, in particular areas however it more urgently deserves attention. It is hoped that the Agricultural Department will in the near future undertake the demonstration of the most suitable methods of effecting soil conservation in the varying conditions in the Presidency.

I have the honour to be,

Sir,

Your obedient servant,

C. C. SKEETE,

Acting Commissioner of Agriculture.

Report of the Agricultural Department, St. Kitts-Nevis

For the Year Ended 31st December, 1937.

SECTION I.

AGRICULTURE IN THE PRESIDENCY.

WEATHER CONDITIONS.

The rainfall in St. Kitts—Nevis varies materially from year to year. In St. Kitts the rainfall for 1937 was 44.78 inches, being 18 inches below the precipitation of the previous year and 10 inches below the average rainfall for the past twenty-four years. The year has been the driest for the past eleven years. January was a wet month, the rainfall exceeding the average for that month by about 5 inches. The rest of the year was dry with the exception of the months of August and October. The weather in Nevis and Anguilla was also very dry during the year.

In St. Kitts the wet weather in January was beneficial both to the cane crop for reaping in 1937 and to the young crop for 1938, but in Nevis and Anguilla the high rainfall during the month affected the yields of cotton by causing serious boll dropping and producing favourable conditions for the pink bollworm. In consequence infestation by this pest was high early in the season and heavy losses were sustained.

The dry weather during the remainder of the year seriously retarded the growth of the 1938 sugar cane crop, and production in 1938 is therefore likely to be considerably less than the out-put in 1937. The crops in Anguilla were also seriously affected by the drought in that island.

Details of weather statistics are given as an Appendix to this report.

SUGAR.

St. Kitts.

The year was a record one for the sugar cane crop, which continues to be the main industry of the Presidency. An increase was again recorded for the acreage of canes reaped, the acreage being more than 500 acres greater than that reaped for the previous crop. Growers supplied 256,551 tons of cane to the St. Kitts (Basseterre) Sugar Factory as compared with 201,633 tons in 1936 and 205,192 tons in 1935. The yield of cane per acre was also the highest on record, being 28.41 tons as against 23.70 tons in 1936, and 25.35 tons in 1935. Several factors contributed to the increased cane and sugar yields obtained in 1937. The most important factor was the high and well distributed rainfall in 1936. Yields on some estates in the Valley district were also improved by the use of the recent

ly introduced high yielding variety B.2935 in place of S.C.12/4, which has been the standard variety of the dry areas for many years. A more general use of artificial manures and the reduction of the damage to the canes by the small moth borer through biological control contributed their quota to the higher yields obtained in the field and factory. The output of the St. Kitts (Basseterre) Sugar Factory was 34,260 tons of grey crystal sugar, nearly 6,000 tons more than the previous record output of 1935. The sugar exported amounted to 33,074 tons valued at £319,104 as against 26,892 tons valued at £236,959 exported in 1936. Practically the whole output of sugar was sold to the English market, only 1,500 tons being sold to the Canadian market and about 1,200 tons retained for local consumption. Preferences in the United Kingdom and Canadian markets enabled the sugar to be sold at £9. 14. 4. per ton f.o.b., which is nearly £1 a ton above the price for the previous year.

Contracting growers received payment for the first time under the terms of the new contract made in 1936 with the St. Kitts (Basseterre) Sugar Factory, Ltd. A first payment of 14/- per ton was made and the contractors received half the profits, which gave an additional 2/9 per ton making the total price 16/9, as against 15/- in 1936 and 14/11 in 1935. The better price paid to the planters for their canes enabled them to pay to their labourers a bonus of 11d. per ton of cane delivered. The total sum distributed in this way amounted to approximately £11,770.

During the year the Sugar Restriction Scheme came into operation. St. Kitts—Nevis will share in the Leeward Islands' quota, which is 53,500 tons for the quota year 1st September, 1937, to 31st August, 1938, and of this the Presidency has been allotted 28,500 tons. St. Kitts also has the first claim on any shortage from Antigua and vice-versa. Owing to the unfavourable weather during 1937 it appears unlikely at present that St Kitts will be quite able to fill her export quota after allowing for local requirements.

The production for the past ten years is shown in Table I.

TABLE I.

SUGAR—ST. KITTS.

Year.	Average Rainfall for island previous Year. Inches	Acreage reaped. Acres.	* Tons of cane produced.	Tons cane per acre.	* Tons of sugar produced.	* Tons sugar per acre
1928 ..	64.36	6,770	162,829	24.09	19,443	2.87
1929 ..	53.25	6,950	120,106	17.32	13,724	1.97
1930 ..	52.55	6,883	150,737	21.98	18,680	2.71
1931 ..	45.98	6,096	98,209	16.11	12,021	1.97
1932 ..	57.60	6,537	164,259	25.13	19,969	3.05
1933 ..	77.27	7,715	184,538	24.27	24,167	3.13
1934 ..	63.97	7,630	200,211	26.23	28,320	3.62
1935 ..	55.34	8,105	205,192	25.25	28,491	3.52
1936 ..	48.89	8,508	201,633	23.70	28,174	3.29
1937 ..	63.12	9,029	256,551	28.41	34,260	3.77

* Long tons.

According to the Customs returns the exports of sugar, molasses and syrup during the period 1928—1937 were as shown in Table II.

TABLE II.

SUGAR — EXPORTS AND VALUES.

Year	Sugar		Molasses		Syrup		Prices Grey Crystals f.o.b. per long ton
	Exports Long tons	Value £	Exports Gals. Imp.	Value £	Exports Gals. Imp.	Value £	£ s. d
1928 ..	18,610	264,490	339,340	1,710	34,473	1,336	14 18 0
1929 ..	12,736	150,153	—	—	8,970	299	11 16 4
1930 ..	17,637	178,654	—	—	7,877	263	10 6 2
1931 ..	10,579	110,234	589,690	5,759	—	—	9 10 2
1932 ..	19,327	187,347	459,404	1,197	250	5	9 17 9
1933 ..	22,588	234,747	630,749	2,897	—	—	9 18 3
1934 ..	27,415	252,986	688,896	1,353	20,547	765	9 3 5
1935 ..	27,280	236,964	459,207	5,126	26,040	1,106	8 16 10
1936 ..	26,892	236,959	520,910	6,562	77,079	5,094	8 16 4
1937 ..	33,074	319,104	466,045	6,497	109,955	5,180	9 14 4

INVESTIGATIONAL WORK.

During the year the Department continued to conduct experiments on behalf of the sugar industry in co-operation with the Sugar Cane Investigation Committee and twenty-nine experiments with a total of 1,061 plots, were reaped. The results of those experiments are given in Section II of this report. Thirty-five new experiments were also laid down.

Nevis

There is little progress to report in the small sugar industry in Nevis. The desire of the Nevis peasant to continue the cultivation of sugar cane although faced with many difficulties will be readily understood, if it is remembered that the muscovado sugar manufactured from a part of the crop is extensively used in the homes of the peasants and is preferred to the grey crystal sugar manufactured in St. Kitts. The trash from the sugar cane also improves the fertility of the soil. A portion of the cane crop is sold each season to the St. Kitts (Basseterre) Sugar Factory Ltd. and for these canes the net price realised by most of the growers is very low. The price paid by the St. Kitts Factory is 14/- per ton plus an additional 1/- per ton granted towards transport expenses, but the grower only receives 10/6 per ton for canes delivered at the pier in Nevis, the charges for shipping and transporting the canes to St. Kitts amounting to 4/6 per ton. Out of the 10/6 the grower has to pay the cost of trucking his canes from the field to the pier, which in some instances is as high as 4/- per ton. For the 1937 crop peasants who sold canes to the St. Kitts (Basseterre) Sugar Factory Ltd. obtained a somewhat better price as they received a deferred payment of 1/4 per ton, making the price at the weighbridges 11/10 per ton.

Early in the year there was a suggestion that steps should be taken by Government to ascertain if anything could be done to reduce the cost of the internal transport of canes in Nevis and to improve the present arrangements for transporting the canes to St. Kitts. In consequence a small Committee, of which the Agricultural Superintendent was Chairman, was appointed by Government in March to consider the matter and to make recommendations. After careful consideration the Committee was unable to offer any suggestions that would lead to a reduction in the cost of either the internal transport of canes in Nevis or the sea transport of the canes to St. Kitts, but it made certain recommendations which it considered should help to improve the position of the cane farmers in

Nevis. The Committee's report is included as an Appendix to this report and it will be seen from the report that cane farmers in Nevis who have to sell their canes to the St. Kitts (Basseterre) Sugar Factory are in a far more difficult position than the peasant cane farmers supplying canes to sugar factories in the other West Indian islands.

The following quantities of canes were shipped from Nevis to St. Kitts during the past four years:

	Weights received at the Factory in St. Kitts.
1934	4,139 tons
1935	2,429 „
1936	1,065 „
1937	2,036 „

Further details of the industry are given in the Agricultural Instructor's report.

COTTON.

In Table III the acreage and production of Sea Island cotton for the ten year period 1927—28 to 1936—37 are given It will be seen that the acreage of cotton planted in the Presidency for the 1936—37 season was nearly 1,000 acres more than the acreage planted for the previous season and almost equal to the acreage planted in 1929—30. Owing to an unfavourable season in the three islands, however, the production was not as high as that of 1935—36. In Nevis and Anguilla all the cotton produced was exported during the year, but the export of the St. Kitts crop was not completed until early in 1938. A part of the crop was sold at prices ranging from 1/6 to 1/11 per lb. c.i.f. for clean lint, but a fair amount of cotton remained unsold in England at the end of the year.

In St. Kitts the cotton leaf worm (*Alabama argillacea*) made its appearance early in the season and was controlled by dusting the plants with insecticide. No serious damage was, however, done to the crop. In Nevis this pest was also troublesome.

In Nevis and Anguilla severe damage was done to the crops by the pink bollworm (*Platyedra gossypiella*). Very wet weather during the latter part of the season provided favourable conditions for the rapid multiplication of this insect.

Mr. F. A. Squire, B.Sc., A.C.T.A., Entomologist for Cotton Pest Investigation in the Windward and Leeward Islands, visited St. Kitts, Nevis and Anguilla during the year. His reports on these visits indicated the need for a more rigid enforcement of the laws and regulations dealing with cotton pest control, especially of those relating to the close season for cotton and okra plants.

TABLE III.

COTTON.

Year	Area planted in Sea Island Cotton. Acres.				Total Lint production in lbs.				Yield of Lint per acre in lbs.		
	St. Kitts	Nevis	Anguilla	Total	St. Kitts	Nevis	Anguilla	Total	St. Kitts	Nevis	Anguilla
1927–28 ..	1,000	1,500	64	2,564	149,070	407,000	22,000	578,070	150	271	..
1928–29 ..	1,400	1,500	300	3,900	327,300	274,000	51,000	652,300	230	109	170
1929–30 ..	2,200	2,500	300	4,200	397,763	80,000	27,000	504,763	180	40	90
1930–31 ..	1,170	1,500	300	2,970	129,900	159,000	32,200	321,100	111	106	107
1931–32 ..	200	250	218	668	35,140	23,737	26,141	85,018	176	95	120
1932–33 ..	130	100	134	364	20,352	10,042	18,767	49,161	156	100	140
1933–34 ..	253	600	280	1,133	59,129	47,677	34,881	141,687	234	80	124
1934–35 ..	400	800	300	1,500	101,869	72,603	26,276	200,748	255	91	88
1935–36 ..	1,030	1,857	400	3,287	235,353	219,216	30,471	485,040	228	118	76
1936–37 ..	1,190	2,578	400	4,168	216,811	199,768	31,440	448,019	182	77	78

On Mr. Squire's advice the close season for cotton and okra plants in St. Kitts was extended by a month to a period of three months for the 1937—38 season and it is hoped that there will be a close season of at least three months in Nevis and Anguilla for the 1938—39 season.

It has been found recently in St. Kitts, however, that there are probably other sources, besides okra, wild cotton and volunteer Sea Island plants left standing during the close season, by which the pink boll worm may be carried over from season to season. In August two birds' nests, partially constructed with Sea Island seed cotton, were discovered by the Cotton Inspector. The birds had obtained the cotton from a cotton field a short distance from where the nests were found. Forty-three seeds were obtained from these nests and a living larva of the pink bollworm was recovered from one of the seeds. The nests belonged to the bird known locally as the "Ground Dove." On another occasion the nest of a sparrow was also found which contained a small quantity of Sea Island seed cotton, but there were no pink bollworms present in this nest. No "double seeds" containing the resting stage of the pink bollworm were found in any of these nests and it is not likely that the living larva found would have survived the close season. It may be mentioned that "double seeds" are very seldom seen in St. Kitts, but that a fairly high percentage are found in the cotton seed in Nevis.

Birds have also been frequently observed picking up pieces of seed cotton in estates' yards apparently for nest building.

According to the Customs returns the exports of cotton lint, cotton seed and cotton seed oil during the period 1928—1937 were as shown in Table IV.

TABLE IV.

COTTON — EXPORTS AND VALUES.

Year	Cotton Lint		Cotton Seed		Cotton Seed Oil		Cotton Lint St. Kitts c.i.f. per lb.
	Exports lbs.	Value £	Exports Long tons	Value £	Exports Gals.	Value £	s. d.
1928 ..	438,552	36,038	138	596	..	..	2 5
1929 ..	690,068	66,407	383	1,317	..	..	2 0
1930 ..	778,761	65,484	364	1,837	12,272	932	2 6½
1931 ..	245,511	12,364	388	1,363	9,489	425	1 0 to 1 10
1932 ..	127,444	5,961	35	290	2,657	224	10 to 1 2
1933 ..	88,550	4,701	..	..	..	..	1 1
1934 ..	166,910	7,324	..	..	7,298	442	1 3 to 1 4
1935 ..	204,647	10,327	2	16	5,995	533	1 5 to 1 8
1936 ..	508,295	33,885	142	601	7,987	765	1 6½ to 1 10½
1937 ..	398,862	29,588	130	577	7,249	725	1 6 to 1 7

ST. KITTS SEA ISLAND COTTON GROWERS' ASSOCIATION LTD

The St. Kitts Cotton Growers' Association, of which the Agricultural Superintendent is Honorary Secretary and Treasurer, was registered during the year under the Companies Act of the Leeward Islands as the St. Kitts Sea Island Cotton Growers' Association Limited. The Association was represented at the Second Ordinary General Meeting of the West Indian Sea Island Cotton Association (Inc.) held in Antigua in November, by one of its Directors, Mr. W. E. Walwyn.

MINOR INDUSTRIES.

COCONUTS.

The exports of coconuts and copra from Nevis for the period 1928 to 1937 are given in Table V. It appears that this small industry is making a very slow recovery from the effects of the hurricane in 1928.

TABLE V.

COCONUTS—EXPORTS AND VALUES.

Year	Coconuts		Copra	
	Exports	Value	Exports	Value
	No.	£	lb.	£
1928	312,648	2,040	3,360	41
1929	1,668	10	..	..
1930	16,144	100	553	7
1931	43,900	256	..	..
1932	78,770	445	16,480	215
1933	56,953	208	23,520	98
1934	105,646	228	58,800	223
1935	95,157	215	8,440	26
1936	9,030	26	45,464	205
1937	7,868	16	82,320	425

PROVISION AND MARKET GARDEN CROPS.

As a result of the drought ground provisions were not as plentiful as usual during the year. Tomatoes were again grown by the peasants in Nevis for export to Canada during the winter months. Good prices were obtained for the small quantity exported and growers received 1½d per lb. net for their produce. The quantities of tomatoes exported from Nevis to Canada during the period 1932—37 are given below.

	Lb.	Value.
1932	58,590	£524
1933	28,637	221
1934	14,000	105
1935	15,880	120
1936	14,560	108
1937	15,988	230

LIVE STOCK.

The exports of live stock during the past ten years are given below:—

	Number.	Value.
1928	561	£1,708
1929	427	770
1930	473	1,544
1931	796	3,107
1932	1,185	2,636
1933	971	2,325
1934	762	796
1935	751	925
1936	903	1,604
1937	1,730	2,258

Hides and skins to the value of £726 were exported during the year.

No serious animal diseases occurred during the year. The two pure bred Zebu bulls owned by Government in Nevis were in good health and condition during the year. One of these animals is now too old for effective service and provision has been made for replacing him.

AGRICULTURAL EXPORTS.

The following table shows the chief agricultural products exported during the years 1935, 1936 and 1937.

Article	1935		1936		1937	
	Quantity	Value £	Quantity	Value £	Quantity	Value £
Sugar, cryst. ..	27,280 long tons	236,964	26,892 long tons	236,959	33,074 long tons	319,104
Syrup and Molasses ..	485,247 gal	6,232	597,989 gal	11,656	576,000 gal	11,677
Sugar, musco ..	2 tons	36	—	—	1 ton	10
Cotton, lint ..	204,647 lb.	10,327	508,295 lb.	33,885	398,862 lb.	29,588
Cotton seed ..	2 tons	16	142 tons	601	130 tons	577
Cotton seed oil	5,995 gal.	533	7,987 gal	765	7,249 gals	725
Coconuts ..	95,157	215	9,030	26	7,868	16
Copra ..	8,440 lb.	26	45,464 lb.	205	82,320	425
Salt ..	2,015 ton	2,188	3,484 tons	3,173	2,519 tons	2,968
Tomatoes ..	15,880 lb.	120	14,560 lb.	108	15,988 lb.	230
Vegetables ..		327		356		521
Fruit ..		20		61		123
Sweet Potatoes	29,630 lb.	86	7,750 lb.	22	1,465 lb.	6
Tamarinds ..	2,625 lb.	12		13		51
Hides & Skins..		311		333		276
Horses ..	15	105	12	80		180
Mules ..	25	256	40	536	34	290
Asses ..	35	29	3	2	4	3
Cattle ..	47	222	96	406	286	1,031
Sheep ..	494	227	547	460	791	395
Goats ..	86	45	151	75	338	168
Swine ..	49	41	54	45	256	191
Total Exports		£258,338		£289,767		£368,555

SECTION II.

WORK OF THE DEPARTMENT OF AGRICULTURE.

PLANT IMPORTATIONS.

During the year the following plants and seeds were imported:—

CUTTINGS.

Sugar cane seedling B.3125 ..	7 cuttings from the Plant Quarantine Station, Trinidad.

SEEDS.

Cotton Seed	80 lb from Montserrat.
Onion Seed	50 lb from Teneriffe.
Cauliflower Seed	1 lb from India through the Commissioner of Agriculture.
Other vegetable seeds	120 lb from U.S.A.
Tonka Bean	100 seeds from Trinidad through the Commissioner of Agriculture.
Maize	6 bags from Trinidad through the Commissioner of Agriculture.

SEED AND PLANT DISTRIBUTION.

The following planting material was distributed from the nurseries in St. Kitts and Nevis during the year:—

PLANTS.

Papaw	6
Ornamental and shade trees	828
Grafted Mangoes (Julie)	53
Budded Citrus	9
Tonka Bean	16

SEEDS, SEEDLINGS AND CUTTINGS.

Sugar-cane, cuttings	389,740
Onion seedlings	460,000
Tomato „	304,000
Egg-plant „	2,500
Cabbage „	1,400
Kohl-Rabi „	200
Sweet potato cuttings	4,030
Cassava „	4,410
Cotton Seed, lb	66,161
Yams, lb.	966
Indian Corn, lb.	1,235
Onion Seed, lb.	16
Vegetable Seeds, lb. (in small pkts.)	118

WORK AT THE EXPERIMENT STATION, LA GUERITE.

Sugar-Cane. The variety B.3439 was grown on a half acre plot to provide cuttings for distribution. At the end of the year approximately 70,000 cuttings of this variety were distributed to the estates for trial. Four plants of this Barbados seedling were received from the Plant Quarantine Station at Trinidad in January, 1936. B.3439 is a cross between Ba. 11569 and Queensland 813. It is a good germinator, an excellent buncher and a very fast grower and has been recommended by Dr. McIntosh, the Geneticist of the British West Indies Central Sugar Cane Breeding Station, as an early cane for the B.2935 area.

Seven cuttings of B.3125 were received from the Plant Quarantine Station in May. All the plants germinated and at the end of the year 600 plants were distributed to one estate for multiplication.

Small plots of ratoons of B.3013 and B.3127 were cultivated and planting material from them distributed at the end of the year.

Cotton. About 80 lb. of pedigree cotton seed was imported from Montserrat for planting a seven acre multiplication plot. The plants were badly stunted by the severe drought and a yield of only 180 lbs. of clean lint to the acre was obtained. Sufficient seed was produced for planting 80 acres on an estate in 1938 to provide the island's supply of seed in 1939. Fifty plants were selected and the flowers self-fertilised as a start with selection work on this type of cotton.

Fruit, Vegetables and Ground Provision Crops. The following fruit trees are cultivated at the Station to provide budwood for plant propagation:—

Julie Mango	7
Avocado Pear (Pollock)	2
Grapefruit (Marsh Seedless)	2
Orange (Washington Navel)	2
Orange (Florida)	3
Mandarin Orange	1
Dancy Tangerine	1

Onions. Several thousand onion seedlings were raised and were readily sold.

Other Vegetables. Fairly large quantities of seedlings of cauliflower, tomato, cabbage and egg-plant were also raised.

Ground Provision Crops. Plots of sweet potato and yam varieties were grown and planting material distributed from them.

A plot of maize was grown and a number of plants selected for breeding work.

CHEMICAL ACTIVITIES.

The examination of soils on behalf of sugar estates was continued and advice was given on the results of analyses made.

Other samples examined included milk, liquors, cane juices, lime, manures, kerosene oil (flash point), etc.

AGRICULTURAL EDUCATION.

Lectures in Soil Science and Botany were given to the senior class from the Grammar School. The lectures were given twice a week at the Experiment Station and the work covered the syllabus of the Cambridge School Certificate examination in general science.

OFFICIAL VISITS.

Visits were paid to the Experiment Station by the following:—

His Excellency the Governor Sir Gordon James Lethem, K.C.M.G., His Honour D. R. Stewart, C.M.G., Administrator, Mr. G. A. Jones, Dip, Agric., Commissioner of Agriculture, Mr. C. C. Skeete, B.A., Assistant Commissioner of Agriculture, Mr. P. E. Turner, M.Sc., F.I.C., Adviser in Sugar Cane Experiments to the Commissioner of Agriculture, and Dr. A. E. S. McIntosh, B.Sc., Ph.D., Geneticist of the Sugar Cane Breeding Station at Barbados.

SUMMARY OF RESULTS OF SUGAR CANE EXPERIMENTS REAPED IN 1937.

VARIETIES.

Dry Areas.

As plant canes and first ratoons the variety B.2935 has again proved itself definitely superior in yields of cane and sugar to the varieties G.119, P.O.J. 2878, B.726 and S.C.12/4.

On a wetter district of the dry areas B.2935 produced 12 tons more cane and a ton more sugar per acre than the varieties B.726 and S.C. 12/4.

Wet Areas.

In two experiments the variety B.H.10(12) gave higher yields of cane and sugar than B.726. The experience in St. Kitts has been that B.726 is not a good germinator and is not easy to establish.

DISTANCE OF PLANTING.

Dry Areas.

A spacing of 3 feet within the row gave a significantly higher yield of cane than a spacing of 4½ feet.

Wet Areas.

In a wet area a planting distance of 3 feet in the row also gave a significant increase in yield over a spacing of 4½ feet.

The distance between the rows in the experiments in both dry and wet areas was 4½ feet.

MULCHING WITH MEGASS.

In one experiment the use of a 2-3 inch megass mulch in the absence of an application of potash resulted in an increase of nearly 5 tons of cane per acre. In a second experiment a similar result was obtained when mulching was combined with an application of 1 cwt. of muriate of potash to the acre.

MANURIAL TREATMENT OF UNPENMANURED UPPER LANDS

In both the dry and wet areas of the upper lands, which have not received pen manure, increases in yield of from 3 to 4 tons of cane per acre have been obtained from the use of potash. On these lands 1½ cwt. of high grade muriate of potash appears to be the most economical application for plant canes. The results also indicate that on these lands it is advisable to give a similar application of potash to the ratoon canes.

EFFECT OF POTASH ON LANDS RECEIVING APPLICATIONS OF PEN MANURE.

The results of this experiment indicate that it is unnecessary to supplement the standard dressing of pen manure (25 tons to the acre) with potash, and confirm the results of a similar experiment conducted by the Department some years previously.

PEN MANURE, INORGANIC MANURES AND MULCHING.

Dry Area.

An application of approximately 25 tons of pen manure to the acre resulted in a large increase in yield over a dressing of sulphate of ammonia and muriate of potash.

The increased yield obtained from mulching demonstrated again the value under our dry conditions of a proper surface mulch of organic material.

The yields from the plots receiving artificials may have been much higher if a better balanced mixture of artificials, in which phosphate was included, had been used.

PEN MANURE VERSUS ARTIFICIALS.

Wet Area.

An application of 28 tons of pen manure to the acre gave a large increase in yield over a dressing of 6 cwts. of sulphate of ammonia and 1½ cwts. of muriate of potash to the acre.

OPTIMUM SIZE OF DRESSING OF PEN MANURE.

Dry and moderately wet areas.

The results of these experiments indicate that an application of 25 to 30 tons of pen manure to the acre to plant canes is the dressing of this material that is likely to give the heaviest yields.

CULTURAL EXPERIMENTS.

No differences in the yield of first ratoon canes were recorded between cross holing and not cross holing of the land before planting. Similarly the opening up of the tarish before planting resulted in no increase in yield of the first ratoon canes. Increases in yield could probably be obtained if the tarish is very thoroughly shattered by the use of a mechanically drawn implement.

The results of the experiments are given in detail in Appendix I.

EXPERIMENTS LAID DOWN.

The following experiments were laid down during the year:—

Manurial	12
Cultural	2
Mulching	1
Auxiliary elements	3
Variety	10
Ratoon areas for 1939 experiments ..	6

SOIL SURVEY.

Work on the soil survey was continued during the year and the results are summarised in this report.

READILY AVAILABLE LIME, POTASH, PHOSPHATE AND MANGANESE.

(Surface 9 inches layer of soil)

Estate	Field	Exchangeable Lime (CaO) grms per 100 grms air dry soil	Exchangeable Potash (K20) Parts per million parts of air dry soil.	Available Phosphate (P205) Truog Parts per million parts of air dry soil.	Easily soluble Manganese
Buckleys ..	Jib	0.168	75	—	—
	Man-o-War	0.141			
	Grape Tree, 33	0.150	51		
	Pasture	0.106	70		
	Lower Pasture	0.192			
	Upper Herring				
	Ground	0.172	47		
	Lower „	0.166		33	
	Grape Tree, 37	0.146	87		
	Lower Cistern	0.161	91		
	Little Ghaut	0.197	105		
	Wall House	0.130	67		
Canada ..	Short Head	0.143	64	25	trace
Milliken ..	Miss Wall	0.150	79		
	Cart Path	0.208	58	64	
	Cooper House	0.249	82		
	Fig Tree	0.176	96		
	Stone House	0.197	55		
	Upper Taylor Side	0.157	62		
Camp ..	Berridge (from banks)	0.161	107	56	
West Farm ..	East Wind Mill	0.132	50		
	Lower Philips	0.154	48		
	Upper Cinnamon	0.132	55	17	
	West Windmill	0.155	176	21	
	Man-o-War	0.146	30	20	Present
	Big Heart	0.210	55	17	Present

PLANT CANE ANALYSES.

Estate	Field	Exchangeable Lime (CaO) grams per 100 grms air dry soil	Exchangeable Potash (K2O) Parts per million parts of air dry soil	Available Phosphate (P2O5) Truog Parts per million parts of air dry soil	Easily soluble Manganese
West Farm ..	Conolly	0.159	202	166	
	Gum Tree	0.170	164	51	
	Garnett Hall	0.240	180	118	
	Bahala	0.157	114	162	
	Hutchinsons	0.150	172	60	
	Garden Field	0.199	122	120	
	Pumpkin Ground	0.166	73	29	
Molineux .	Liming Expt. 1924	0.195	115		
	Backwards	0.260	131		
	River Hill	0.119	87		
	Middle Field	0.241	90		
	Blue Beard	0.196	93		
	Upper Negro House	0.182	200		
	Sugar Works	0.177			
	Job	0.138	130		
	East Blue Beard	0.206	66	18	
	Half Moon	0.141	28	10	
	Paddock	0.143	45	13	present
	Upper Sugar Works	0.211	154		
Mansion ..	Coco Gut	0.166	50	18	present
	Pond	0.199	158	43	present
	Log Tree	0.141	168		
	Garden Pear Tree (Pen manure)	0.228	105		

PLANT CANE ANALYSES.

Estate.	Field.	Exchangeable Lime (CaO) grms. per 100 grms. air dry soil.	Exchangeable Potash (K2O)	Available Phosphate (P205) Truog	Easily soluble Manganese
			Parts per million parts of air dry soil.		
Mansion ..	Still House ..	0.179	108	29	absent
	Robin ..	0.123	50	13	
	Tone Tone ..	0.152	114	66	
	Alice Ground	0.114	153	26	
	Log Tree, 37 ..	0.134	129	35	
	Pond 37 ..	0.143	187	106	
Estridge ..	Lower Mahogany	0.155	55	28	present
	Lower Challenger	0.124	121	25	
	Julius Bell ..	0.232	60	..	
L. Bourryeau ..	Lower Hill ..	0.198	187	30	
Bellevue ..	Pen manured ..	0.221	197	140	present
	Copper Hole ..	0.177	210	120	present
	Good Luck ..	0.172	160	74	present
	Pen Field ..	0.168	130	..	present
Hope	Potter	0.110	127	22	present
	Taylor's ..	0.128	55	14	present
	Upper Potter ..	0.137	55	15	present
	Potash Expt. 33-35 ..	0.162	78	..	
	Patrick ..	0.141	171	37	
	Burnt Ground	0.174	65	33	
	Hair Ridge ..	0.143	102	37	
	Mary ..	0.152	137	48	
	Silk Cotton .	0.170	272	132	
	Middle ..	0.170	191	104	
Lynches ..	Cinnamon ..	0.194	68	..	

PLANT CANE ANALYSES.

Estate	Field	Exchangeable Lime (CaO) grms. per 100 grms. air dry soil	Exchangeable Potash (K2O)	Available Phosphate (P2O5) Truog	Easily soluble Manganese
			Parts per million parts of air dry soil		
Lynches ..	Cistern Ground	0.163	97		
	Gerald Negro House ..	0.169	105	22	
	Paddock ..	0.200	90	9	present
Lavingtons ..	Cup Tree ..	0.106	44	29	absent
	White Gate ..	0.126	44	35	absent
	Cherry Tree ..	0.150	99	18	absent
	Gerald ..	0.152	85	26	absent
	No. 6 ..	0.161	44	200	absent
	Copper Hole ..	0.206	55	50	trace
	Tobacco Bottom	0.199	42	23	absent
Parsons ..	Lower Nine Acre ..	0.177	82	..	
	Middle Nine Acre ..	0.148	91		
	Tamarind Tree	0.181	163	..	
	Lower Long Run ..	0.310	230	116	
Caines ..	Penny Flat ..	0.206	186	..	
	Caines Gate ..	0.367	208	..	
Willetts ..	Lower Long Run ..	0.162	179	132	trace
	Pen Field ..	0.134	88	19	absent
	Franco ..	0.157	88	32	absent
	Long Run ..	0.150	98	22	
Mt. Pleasant ..	East Negro House ..	0.135	18		
	Peas Patch	0.106	55		
	Cess Pool	0.141	55	16	absent
	Copper Hole	0.157	176	32	absent
	Jupiter	0.166	44	20	
	Cotton	0.143	349	38	
	Corn Ground	0.154	39	44	

PLANT CANE ANALYSES.

Estate	Field	Exchangeable Lime (CaO) grms. per 100 grms. air dry soil	Exchangeable Potash (K2O)	Available Phosphate (P2O5) Truog	Easily soluble Manganese
			Parts per million parts of air dry soil		
Belmont ..	Middle Mountain	0.112	53		absent
	Chapel	0.172	75		absent
	Lower Negro House	0.230	97		absent
	Carpon Long Run	0.187	100		
	Belmont Well	0.280			
	New Upper Lands	0.170		31	
Whites	Pasture	0.152		31	
	Mid River	0.137	55	16	present
	Big River	0.157		27	
	Stout and Jolly	0.166	114	100	
Wingfield ..	Count William	0.216	109		
	Cotton Tree	0.217	88	12	present
	Extension	0.179	44	11	
	Garden Tree	0.192	44	11	present
	Upper Spout	0.146	57	15	
	Mattis Ghaut	0.159	53	25	
	Walters	0.168	69	15	
	Man-o-War	0.174	36	15	
Bourkes ..	Little Sir Gillies	0.396	200		
Ottleys (Cayon) ..	Upper Matthew Side	0.184	134	46	
	Pine Garden	0.186	122	40	
	Middle Matthew Side	0.211	137		
	Stable Field	0.237	252		
	Air Pipe	0.177			
	Garden	0.212			

PLANT CANE ANALYSES.

Estate	Field.	Exchangeable Lime (CaO) grms. per 100 grms. air dry soil	Exchangeable Potash (K2O)	Available Phosphate (P2O5) Truog	Easily soluble Manganese
			parts of air dry soil Parts per million		
Farm	Penal Negro House	0.202	131		
	Negro House	0.141	83	114	
Fountain ..	Round Hill	0.163		30	
	Wire Field	0.146		24	
	Potato.	0.173	73		
Cranstouns ..	Belfrey No. 2	0.240	210		
Douglas ..	Slob Field	0.216			

Report of the Agricultural Instructor, Nevis.

SECTION II.

WEATHER CONDITIONS.

The rainfall at the Experiment Station for the year was 46.31 inches which was 12.42 inches less than that of 1936. Rain fell on 145 days during the year and the heaviest fall recorded for any one day was 3.27 inches which occurred on January 2nd. The rainfall was not so well distributed as it was in 1936. It was excessive during the early part, followed by the usual dry period, but there was a marked absence of the usual heavy falls during the latter part of the year.

SUGAR.

The total acreage under sugar cane was about 800 acres. Reaping of the crop began in February, and as in the past, a part of the crop was made into muscovado sugar at the local mills, and the remainder sold to the St. Kitts (Basseterre) and the Cane Garden Factories.

The total quantity of canes sold is as follows:—

St. Kitts (Basseterre) Factory ..	2,134 tons (at the scales in Nevis)
Cane Garden Factory	5,000 „

The price paid for canes at the weighbridges at Charlestown and New Castle for shipment to the Basseterre factory was at the rate 11/10 per ton, 10/6 first payment and a deferred payment of 1/4 per ton, and that paid at the Cane Garden Factory 12/- per ton. The canes sold to the Cane Garden Factory were made into syrup for the Canadian market and the total quantity of syrup shipped was 2,500 barrels containing 131,946 wine gallons.

The acreage planted for the 1938 crop was about 800 acres. The crop made a good start, but was badly affected by the drought during the middle of the year, and as there was not the usual heavy rain during the latter part of the year, the returns are therefore not expected to be so good as those of the past year.

Planting of the 1939 crop was started in November and December and there will be a slight increase in the acreage planted. The varieties B.H. 10 (12) and B.2935 continue to give good results and are gradually taking the place of the other varieties.

Pests and Diseases: The crop was not seriously affected by any pests during the year, and the small moth borer was not as plentiful as it was last year.

COTTON.

The 1936-37 cotton crop was seriously affected by excessive rains in January and February 1937 and the returns were very much less than was expected. The entire crop was reaped by the end of May and the total production was 186,806 lb. of clean lint and 12,962 lb. of stain from 2,578 acres, being at the rate of 72 lb. of clean lint per acre. Of the total crop 58,649 lb. was marketed by the Government and of the remainder 61,150 lb. was shipped to the Continent and 67,007 lb. to the United Kingdom. The whole of the crop handled by Government was shipped as usual to the British Cotton Growing Association. The cotton shipped to the Continent was bought locally at prices ranging from 1/7 to 1/7½ per lb. That shipped to the United Kingdom was valued at 1/11 to 2/- per lb. but very little of it has as yet been sold

The greater part of the 1937-38 cotton crop was planted during the latter part of September. The seed germinated well and the weather following was favourable. The persistent attacks of the leaf worm, which started when the plants were only about four to six weeks old caused great anxiety to the growers and it was only with great difficulty that the crop was saved from complete destruction. The plots were all carrying a heavy crop of bolls but in spite of shedding due to frequent poisoning and damage to the foliage by the worm, the production will probably be above the average.

Pests. The situation with regard to the pink bollworm is serious. The recommendations made by Mr. Squire, Entomologist, for further control of the pink bollworm were adopted and carried out as far as it was possible, and it was expected that attacks by the pink bollworm this season would not be severe. The results have been disappointing, for very early in the season it was observed that the attack by the pink bollworm was general. Investigations were carried out with the object of locating centres where the attack was particularly severe, and it was expected that these centres might be found in the neighbourhood of ginneries, store houses or in localities where cotton had been extensively grown last season. This however did not turn out to be the case, as it was found that the most severe damage was done to plots in damp and sheltered localities. From the investigation it would appear (a) that the incipient attack of the pink bollworm was not more severe at any one place than it was at another, but most damage was done in localities where conditions were favourable for the development of the pest and (b) that the general and severe attack so early in the season could not be attributed entirely to a carry over of the pest from year to year.

The dry weather conditions which existed to the end of the year proved favourable to the crop, and it is believed that in spite of the general attack of the pink bollworm, if this weather continues, a good crop will be reaped.

The cotton leaf worm (*Alabama argillacea*) was very troublesome during the whole season. The attack started when the plants were only about four to six weeks old and continued to the end of the year. Large quantities of Paris Green and lime were used, and it was with great difficulty that the crop was saved from destruction.

This year the peasants were again allowed a credit of Paris Green and lime by the Government and 293 peasants availed themselves of this facility.

The total quantity of Paris Green and lime supplied from the station was 1,506 lb. and 67 bags respectively.

The cotton stainer was not troublesome this season and most of the stained cotton was due to the pink bollworm.

The cleaning up of the cotton plots, the disposal of cotton refuse in the villages, and the cleaning up of the cotton houses were satisfactory.

Visits were paid to the ginneries in connection with the daily fumigation of cotton seed, and all cotton seed, except that for planting was properly disposed of by August 31st according to regulations.

MINOR INDUSTRIES.

COCONUTS.

The coconut plantations continue healthy, but do not appear to be so productive, especially the older ones.

At Pinneys the greater part of the crop is being made into copra for export to Barbados, and the total quantity shipped for the year was 36¾ tons.

LIVE STOCK.

There were no outbreaks of any serious disease during the year but during the dry weather the stock in some parts of the island suffered from lack of sufficient water and pasturage. Stock raising is on the decline on account of the limited market for draught-cattle.

The two Government-owned pure bred Zebu bulls continue in good health and condition. The older animal, which is now aged, is stationed at the Low Ground Settlement and the other is at Pinneys estate where he had been for the past two years.

GROUND PROVISIONS.

The usual ground provisions such as sweet potatoes, yams, Indian corn, cassava, peas and beans, were grown during the year, and the results on the whole were satisfactory. Planting material of the best varieties of the above were supplied at the Station.

The acreage planted in tomatoes was about 25 acres, a slight increase on that planted last season. There were two main plantings—one early in September and the other towards the end of September.

The early planting was affected by unfavourable weather, and the yields were not very good, but the later planting did very much better.

The total quantity of tomatoes shipped was 778 crates, 10 crates to Bermuda and 768 to Canada. A fair portion of the crop was also disposed of in the local market.

The onion crop turned out fairly well, and was all sold in the local market.

Pests: Very little damage was done to the crop by the green bug, and during the past two years this pest has not been so troublesome.

The horn worm caused a fair amount of damage to the foliage and young fruits of tomato plants.

EXPERIMENT STATION.

The hedges have all been trimmed and kept in good order. In the nursery the raising of ornamental plants and fruit trees was continued.

Experiments with economic and food crops were carried out at the station and seeds and cuttings of the varieties giving best results were distributed to growers.

THE DEMONSTRATION PLOT.

Crops such as sugar cane, cotton, ground provisions and vegetables are grown on this plot with the object of providing a larger supply of planting material to meet the growing demands and also to demonstrate the correct methods of cultivation. Accounts showing the cost of the various operations in connection with each crop are kept, and also a record of the yields obtained. Every effort is taken to draw the peasants' attention to these plots when they come to the Station.

VEGETABLE NURSERY.

The nursery for raising vegetable seedlings was continued and seedlings from 20 lb. of tomato seed and 35 lb. of onion seed were distributed from the Station during the year. Cabbage and other green vegetable seedlings were also distributed.

COTTON SELECTION.

It was decided to discontinue work on seed selection and to introduce the Montserrat type of cotton for trial under Nevis conditions. A multiplication plot was planted at the station and sufficient seed to plant field plots amounting to about 180 acres were obtained from St. Kitts. The field plots are at Round Hill, Eden Brown, and Powells estates and it is expected that sufficient seed would be obtained from these plots to plant the whole island's crop next season.

PLANT DISTRIBUTION.

The plants, seeds and cuttings distributed during the year are shown below.

Ornamental plants and shade trees	134
Grafted Mangoes (Julie)	18
Bay trees	154
Budded Oranges (Washington Navel)	9
Cane Plants	87,350
Sweet Potato cuttings	3,030
Cassava cuttings	4,410
Selected cotton seed lb.	66,161
Yams lb.	186
Seed Corn lb.	35
Peas and Beans lb.	68
Tomato Seedlings	303,150
Onion Seedlings	438,625
Egg Plant Seedlings	2,000
Cabbage	1,200
Kohl Rabi	200

AGRICULTURAL EDUCATION.

School Gardens. There is no improvement with regard to work on the school gardens. Most of the plots are abandoned, and it would appear that no agricultural instruction of a practical nature is now given at the elementary schools. Some of the boys from the Brown Hill School have been to the Station on Saturdays when they were shown around the plots and given instructions in and practice in grafting and budding.

Advisory Work. The Agricultural Instructor pays visits to estates and peasants' plots and is in close contact with the planting community.

The Land Settlements continue to receive a great deal of the Instructor's attention, and the cane nurseries and demonstration plots on the settlements receive his personal attention. These plots are of great value to the allotment

holders as they furnish an object lesson in cultivation and care of the crops and are also a source of supply of suitable planting material for the settlements.

The Agricultural Instructor is Honorary Secretary of the Agricultural and Commercial Society and the Cotton Growers' Association. The Agricultural and Commercial Society held eight meetings during the year and the Cotton Growers' Association three, and the following were the chief matters discussed.

The introduction of the Montserrat type of cotton, the issuing of Cotton Purchasers Licenses, pink bollworm control, meeting of the close planting season, matters connected with the second ordinary general meeting of the West Indian Sea Island Cotton Association (Incorporated) and matters connected with the Agricultural and Industrial Show to be held early in 1938.

The Agricultural Instructor wishes to thank the estate owners and the planting community as a whole for their co-operation with the Agricultural Officers, which greatly facilitated the work of the Department.

OFFICIAL VISITS.

Periodical visits are paid by the Commissioner of Agriculture and members of his staff for the purpose of discussing and advising on local agricultural problems. Regular visits are paid by the Agricultural Superintendent at St. Kitts.

PUBLICATIONS RECEIVED.

The following publications have been regularly received and are hereby gratefully acknowledged. The Journal of the Imperial College of Tropical Agriculture, Journal of Agricultural Research and Experiment Station Record, United States Department of Agriculture, Journal of the Empire Cotton Growing Corporation, Journal of the Agricultural Society, Jamaica, Report of the Agricultural Department, Barbados, Report of the Experiment Station, Puerto Rico, Report of the Agricultural Department and the Agricultural Bulletin, Bermuda, Climatological Report, San Juan, Puerto Rico, Report of Fourth Annual General Meeting of the West Indian Sea Island Cotton Association and of the Statutory Meeting and the First Ordinary General Meeting of the West Indian Sea Island Cotton Association (Incorporated); Report of the Second Meeting of the British West Indies Fruit and Vegetable Council (Eastern Group), Annual Report of the Sugar Cane Investigation Committee, Trinidad.

REPAIRS TO BUILDINGS.

No repairs were done to the building, but the inside of the office at the Station was painted during the year.

STAFF CHANGES.

There were no staff changes during the year.

Report of the Agricultural Instructor, Anguilla.

FOR THE PERIOD 1ST JANUARY TO 31ST DECEMBER, 1937.

WEATHER CONDITIONS.

The total rainfall recorded at the Demonstration Plot in the Valley for the year 1937 was 29.94 inches, which is 21.74 inches less than that of the previous year and 1.53 inches less than the precipitation in 1935. Rain fell on 95 days during the year and the highest fall recorded for any one day was 1.96 inches on the 7th October. At another station, Wall Blake Estate, the total rainfall for the year was only 24.96 inches.

The following table shows the monthly rainfall at the Demonstration Plot for the year under review.

Month.	Rainfall. Inches.	No. of days on which rain fell.	Maximum fall. Inches.	Date.
January	5.48	19	0.76	10th
February	0.99	3	0.48	23rd
March	1.24	5	0.44	14th
April	2.79	5	1.60	30th
May	1.43	6	0.36	11th
June	0.91	7	0.33	19th
July	2.14	7	0.66	3rd
August	3.98	8	1.66	25th
September	2.95	11	0.66	21st
October	4.33	8	1.96	7th
November	1.60	7	0.44	23rd
December	2.06	12	0.40	18th
Total	29.90	95		

DISTRIBUTION OF PLANTING MATERIAL.

Owing to the severe drought the distribution of planting material from the Demonstration Plot was much less than during the past few years. Distributions of cassava cuttings, yam, seed corn and sweet potato cuttings were made.

THE COTTON INDUSTRY.

The 1936-37 cotton crop amounted to 31,440 lb. of lint (28,294 lb clean cotton and 3,146 lb. stained cotton) as compared with 30,471 lb. in 1936 and 27,570 lb. in 1935. The cotton was purchased from the peasants at the Central Ginnery at 3d. per lb. for clean seed cotton, with the promise of a bonus at the end of the crop. The bonus will be distributed early in 1938 as at the end of the year the final account sales had not yet been received.

The planting of the 1937—38 crop was started in August. The trial of earlier planting in July, for which permission had been granted by the Government, was not possible on account of the severe drought, which prevented the establishment of the crop until early October. At the end of the year the plants had made very little growth and the prospects of the crop were very poor.

The Central Ginnery again supplied the peasants with hand picked seed for planting the crop. Mr. Carter Rey planted about 50 acres with seed of the Montserrat type which was supplied to him by the Agriculutral Department in St. Kitts. The seed obtained from Mr. Rey's fields will be used for planting the crop of the Island in 1938.

COTTON INSPECTION.

The Agricultural Instructor continued to perform the duties of Cotton Inspector and an Assistant Inspector was appointed for a period of three months.

Mr. F. A. Squire, B.Sc., A.I.C.T.A., Entomologist, Cotton Pests Investigation, visited the Island from the 1st to the 5th July. Mr. Squire found that a thorough clean up of cotton plots had been effected and that there were no secondary hosts of the pink bollworm, but he was able to obtain evidence that seed cotton was being kept by the peasants in their houses during the close season. This seed cotton was found to be a source of danger to the cotton crop as it was all heavily infested with pink bollworm. The Government has now made it possible for the Cotton Inspector to make a search in any house in which he suspects seed cotton is being retained during the close season.

GROUND PROVISION CROPS.

Owing to the severe drought throughout the year all the food crops of the peasants were a complete failure.

OFFICIAL VISITS.

During the year visits were paid to the Demonstration Plots by His Excellency Sir Gordon Lethem, K.C.M.G., Governor of the Leeward Islands, His Honour D. R. Stewart, C.M.G., Administrator, the Honourable H. Boon, M.B.E., Treasurer, Dr. C. E. Stevens, Magistrate, and Mr. R. E. Kelsick, Agricultural Superintendent.

SECTION III.

FINANCIAL STATEMENT.

EXPENDITURE.

	£	s.	d.
Personal Emoluments	1,356	0	0
Travelling and Subsistence Allowances	162	6	7
Experiment Stations	140	19	10
Sugar Cane, Cotton and other experiments	247	6	11
Apparatus, Chemicals and Books	36	0	0
Contingencies	19	15	11
Destruction of Wild Cotton, etc.	68	15	8
Demonstration Plots (Nevis and Anguilla)	75	19	6
Purchase of vegetable seeds	32	13	9
Sugar Cane Breeding Station, Barbados	159	10	4
Total	£2,299	9	0

REVENUE.

Sale of Plants and Seeds	£182	14	0

SECTION IV.

SUMMARY OF LEGISLATION AFFECTING AGRICULTURAL INDUSTRIES AS AT 31ST DECEMBER, 1937.

PLANT QUARANTINE.

1. EXTERNAL—IMPORT PROHIBITIONS.

The introduction of all plant material is regulated under the Plant Fumigation Ordinance, No. 3 of 1907, and Plant Protection Ordinance, No. 2 of 1923. Many Statutory Rules and Orders, Proclamations and Regulations have been passed under these Ordinances. All seeds, plants, planting material and containers introduced into the Presidency are forwarded by the Customs and Post Office authorities to the Department for inspection.

The following schedule gives the position of legislation regulating the importation of material likely to be a means of introducing diseases or pests.

A. PROHIBITED ARTICLES, INCLUDING PLANTS, SOIL AND PACKAGES AND ARTICLES CONNECTED THEREWITH.

Articles Prohibited.	Country of Origin.	Reasons for Prohibition.	Index of Legislation
Fruit of the Banana ..	All countries and places except the United States of America and the other islands of the Colony of the Leeward Islands.	Panama Disease and insect pests.	Statutory Rules and Orders. No. 12 of 1937.
Fruit and plants of the Citrus Family and any part of such fruit or plant.	Cuba, Haiti, Santo Domingo, Jamaica and the United States of America.	Citrus Canker, Citrus Blackfly and other pests and diseases.	do.
Other fruit except: Plantains, Nuts and dried, canned, candied or other preserved fruit.	Bahamas, Bermuda, British Guiana, Venezuela and all other countries and places except the British Isles, Canada, the British West Indies and the United States of America.	The Mediterranean Fruit Fly.	do.
Vegetables except: Onions, Irish potatoes, canned or preserved vegetables.	do.	do.	do.
Agricultural produce in bags.	Cuba, Haiti and Santo Domingo.	The Cotton Boll Weevil.	do.
Cotton seed, cotton seed hulls, cotton seed cake, cotton seed meal and other products of cotton seed, seed cotton, cotton lint, cotton plants and any part thereof and other Malvaceous plants and any part thereof.	do.	do.	do.
Fertilizers and stock food containing cotton seed meal.	do.	do.	do.

B. PROHIBITED ARTICLES EXCEPT UNDER LICENCE.

Articles Prohibited.	Country of Origin.	Reasons for Prohibition.	Index of Legislation
Sugar cane, sugar cane seedlings and plants and all parts of the sugar cane.	All countries and places.	Precaution against introduction of pests and diseases not at present in the Presidency.	Statutory Rules and Orders. No. 12 of 1937
Cotton seed, cotton lint and seed cotton and all packages, coverings, bags and other articles and things which have been used as packages, coverings or bags for cotton seed, cotton lint and seed cotton.	All countries and places, except Cuba, Haiti and Santo Domingo.	do.	do.
Banana plants and parts of banana plants.	All countries and places.	Panama disease, root disease and insect pests.	do.
Sprouted coconuts ..	Grenada, St. Lucia, St. Vincent and Trinidad.	Red Ring disease and other diseases.	do.
Soil and plants growing in soil.	All countries and places.	Precaution against introduction of pests and diseases not at present in the Presidency.	do.
Fruit except:—Plantains, nuts, dried, canned, candied, or other preserved fruits.	The British Isles, Canada, the British West Indies and the United States of America.	The Mediterranean Fruit Fly.	do.
Vegetables except:— onions, Irish potatoes, canned or preserved vegetables.	do.	do.	do.

C. PERMITTED ARTICLES, PROVIDED THESE HAVE PASSED INSPECTION BY THE AGRICULTURAL DEPARTMENT OR ARE OTHERWISE AUTHORISED TO BE IMPORTED.

Articles permitted.	Country of Origin.	Index of Legislation.
Garden seeds	From any place ..	Plant Fumigation Ordinance No. 3 of 1907.
Plants, root-stocks, nuts, tubers, bulbs, cuttings, etc. free from soil and not included under "A" and "B."	do.	Plant Protection Ordinance No. 2 of 1923.

II. INTERNAL—EXPORT PROHIBITIONS.

Prohibited Exports.	Destination.	Index of Legislation.
Limes, grapefruit, oranges, mangoes, avocado pears, lemons, pineapples, tomatoes, Irish potatoes, and also any other fresh fruit, nut or vegetable, which the Governor-in-Council may declare by Proclamation, unless under the certificate of a Fruit Inspector.	All countries, except the West Indies and Bermuda.	Ordinance No. 11 of 1930. Statutory Rules and Orders No. 1 of 1931.
Cotton seed, unless under licence by the Governor-in-Council.	All countries ..	Ordinance No. 4 of 1936.
Baled cotton lint, except with the approval of the Cotton Inspector.	All countries ..	Ordinance No. 5 of 1936.
Cotton, regulates the amount to be exported annually.	United Kingdom and Europe and such other areas as the Governor may from time to time prescribe.	Ordinance No. 13 of 1935.

III. INTERNAL—CONTROL OF DISEASES AND PESTS WITHIN THE PRESIDENCY.

Diseases and Pests.	Locality.	Index of Legislation.
Cuscuta spp. "Dodder" ..	Generally.	Plant Protection Ordinance No. 2 of 1923.
Gumming Disease of Sugar Cane.	do.	Statutory Rules and Orders No. 20 of 1927.
Mosaic Disease of Sugar-Cane	do.	Proclamation of May 9th, 1923.
Pink Bollworm, Cotton Stainer and Leaf Blister Mite	do.	Ordinances Nos. 7 of 1918, 8 of 1918, 12 of 1920, 5 of 1921, 16 of 1921 and 6 of 1923. S.R. and O. Nos. 22 of 1927, 29 of 1927, 9 of 1928, 3 of 1935 and 5 of 1936.

2. MISCELLANEOUS LEGISLATION AFFECTING AGRICULTURAL INDUSTRIES.

Measure.	Object.	Index of Legislation.
Cotton	To regulate local traffic in cotton.	Ordinances Nos. 10 of 1913, 9 of 1914 and 5 of 1929.
Cotton	To impose a levy on cotton exported from the Presidency.	Ordinances No. 22 of 1933 and No. 8 of 1937. Statutory Rules and Orders No. 2 of 1936.
Cotton	To provide for the control of cotton seed intended for planting.	Ordinance No. 4 of 1936.
Government Lands	Land Settlement, allotment and sale.	Ordinance No. 4 of 1900. Statutory Rules and Orders 1937. No. 2 of 1932 and No. 15 of 1937.
Wild Birds Protection	Close Season, etc.	Ordinance No. 6 of 1913. Proclamation of May 8th, 1923 and Statutory Rules and Orders No. 13 of 1937.
Forests ..	Protection of	Ordinances Nos. 10 of 1903 and 5 of 1928. Satutory Rules and Orders No. 28 of 1927. Regulations of Oct. 20th, 1923.

3. ANIMAL QUARANTINE.

I. EXTERNAL—IMPORT PROHIBITIONS.

Prohibited importations.	Country of Origin.	Reasons.	Index of Legislation.
Animals, unless provided with local inspection certificate.	All Countries ..	Prevention of animal diseases	Ordinance No. 2 of 1917. Order-in-Council of Dec. 16th, 1924.
Animals, unless accompanied by a certificate of health signed by a Government Veterinary Officer.	Trinidad ..	"Dumb Rabies"	Statutory Rules and Orders. No. 18 of 1937.

II. INTERNAL—CONTROL OF ANIMAL DISEASES WITHIN THE PRESIDENCY.

Notifiable Diseases.	Measures.	Index of Legislation.
Rinderpest, Anthrax, Contagious Pleuro-Pneumonia, Foot-and-Mouth disease, Sheep Pox, Sheep Scab, Glanders, Tuberculosis, Cow Pox, Rabies, Texas Cattle Fever, Foot Rot, Surra.	Destruction, disinfection, isolation, regulation of movement.	Ordinance No. 2 of 1917.

APPENDIX I.

EXPERIMENTAL WORK WITH SUGAR CANE UNDERTAKEN BY THE DEPARTMENT IN CO-OPERATION WITH THE SUGAR CANE INVESTIGATION COMMITTEE.

Twenty-seven experiments with sugar cane, with a total of 1,013 plots (1/20th and 1/30th acre), were reaped by the Department during the year. These experiments had been laid down by the Department in 1935 under the direction of Mr. P. E. Turner, M.Sc., F.I.C., Adviser in Sugar Cane Experiments to the Commissioner of Agriculture, and in co-operation with the Sugar Cane Investigation Committee.

They comprise:—

6 Variety Trials
2 Distance of Planting Trials
3 Mulching Trials
13 Manurial Trials
2 Cultural Trials
1 Liming Trial.

VARIETY TRIALS ON PLANT CANES AND RATOONS.

Plant Canes Dry Areas.

(a) DRIER DISTRICTS OF DRY AREAS.

TABLE I.

A comparison of the Standard Variety S.C. 12/4 with P.O.J. 2878 and B.2935.

Estate: Cunningham Soil: Sandy Loam.
Field: Garden.
Planted: 7th November, 1935.
Reaped: Early 1st February, 1937. Late 6th May, 1937.
Rainfall: Early 64.14 inches. Late 70.44 inches.
Layout: Four 3 x 3 Latin Squares. Two reaped early and two late.
Manurial treatment: 25 tons pen manure and 3 cwts. sulphate of Ammonia to the acre.

Sugar Variety	Yield of Plant Canes (tons per acre)					
	Early reaping		Late reaping		Average values	
	Cane	Sugar	Cane	Sugar	Cane	Sugar
B.2935 ..	47.32	3.69	48.22	4.90	47.77	4.30
P.O.J.2878	40.80	3.60	41.06	4.46	40.93	4.03
S.C.12/4	32.61	3.08	37.20	3.74	34.90	3.41

Both in the early and late reapings B.2935 has given significantly higher yields of cane than either P.O.J.2878 or S.C.12/4, giving on the average 7 tons of cane per acre more than P.O.J.2878 and 13 tons more than S.C.12/4. The sugar yield of B.2935 is also significantly higher than that of S.C.12/4. At the early reaping there was nothing to choose between the sugar yields of B.2935 and P.O.J.2878, but at the late reaping the sucrose content of the juice of B.2935 had improved considerably and its sugar yield was then higher than that of P.O.J.2878. The average values for both reapings show a sugar yield slightly in favour of B.2935.

(b) WETTER DISTRICTS OF DRY AREAS.

TABLE II.

A comparison of the Standard Variety S.C.12/4 with B.726 and B.2935.
Estate: La Vallee. Soil: Sandy Loam.
Planted: 29th November, 1935.
Reaped: Early 28th January, 1937. Late 5th May, 1937.
Rainfall: Early 75.56 inches. Late 81.04 inches.
Layout: Four 3 x 3 Latin Squares. Two reaped early and two late.
Manurial treatment: 25 tons pen manure and 2 cwts. sulphate of ammonia to the acre.

Variety	Yield of Plant Canes (tons per acre)					
	Early reaping		Late reaping		Average values	
	Cane	Sugar	Cane	Sugar	Cane	Sugar
B.2935 ..	48.33	4.01	47.06	5.20	47.70	4.60
B.726 ..	35.76	3.30	35.75	4.00	35.76	3.65
S.C.12/4	34.15	3.19	35.05	3.73	34.60	3.46

Both in early and late reapings the yields of cane and sugar per acre given by B.2935 are significantly larger than those recorded for B.726 and S.C.12/4.

The results of these two experiments confirm the conclusion arrived at last year that the variety B.2935 is superior, as regards cane and sugar yields, to any variety which is now being planted in the drier areas in St. Kitts.

2. WET AREAS.

TABLE III.

A comparison of the Standard Variety B.H.10(12) with B.726.
Estate: Bellevue Estate: Brighton.
Field: Lower Garden. Field: Middle Long Run.
Planted: 19th November, 1935 6th November, 1935.
Reaped: 10th March, 1937. 5th March, 1937.
Rainfall: 100.34 inches. 81.22 inches.
Layout: Four randomised blocks with two replicates of each variety in each block.
Manurial treatment: 25 tons pen manure and 3 cwts. sulphate of ammonia to the acre.

Variety	Yield of Plant Canes (tons per acre)					
	Bellevue		Brighton		Average	
	Cane	Sugar	Cane	Sugar	Cane	Sugar
B.H. 10(12)	43.20	4.06	36.18	3.22	39.69	3.64
B.726	39.67	3.86	29.05	2.77	34.36	3.32

There was some difficulty in establishing the plots of B.726 at Brighton estate and much supplying had to be done.

The results of these two trials indicate that under the conditions of the experiments B.H.10(12) has given significantly larger yields of cane per acre than B.726.

TABLE IV.

A comparison of the varieties B.726, B.H.10(12) and P.O.J.2878 in a wet area as plant canes and first ratoons.

Estate: Mansion. Field: Small Saddlers.

Reaped: As plants 27th March, 1936; as ratoons 12th April, 1937.

Rainfall: 67.86 inches (on ratoons).

Layout: Three 3 x 3 Latin Squares.

Manurial treatment: The plant canes were given 25 tons pen manure and 3 cwt. sulphate of ammonia to the acre. The ratoons received 3 cwts. sulphate of ammonia to the acre.

Variety	Cane (tons per acre)			Sugar (tons per acre)		
	Plants 1934-36	1st Ratoons 1936-37	Total 1934-37	Plants 1934-36	1st Ratoons 1936-37	Total 1934-37
B.726 ..	40.06	35.21	75.27	4.57	3.80	8.37
B.H. 10(12)..	38.97	40.94	79.91	4.20	4.41	8.61
P.O.J. 2878 ..	30.98	27.45	58.43	3.64	2.65	6.29

In the plant canes the yield of B.726 slightly exceeded that of B.H.10(12), but in the first ratoons B.H.10(12) gave a significantly larger yield of cane per acre.

For the two crops the yield of B.H.10(12) exceeded that of B.726 by some five tons of cane per acre. This was entirely due to the excellent ratooning power of B.H.10(12). P.O.J.2878 was very much inferior to the other two varieties both in the plant and ratoon canes.

TABLE V.

A comparison of five varieties as plant canes and ratoons on a dry area.

Estate: Douglas. Field: Salt Water East.

Planted: 13th December, 1934.

Reaped: As plants 24th February, 1936 (early), 28th April, 1936 (late).
As 1st Ratoons: 24th February, 1937 (all plots).

Rainfall on ratoons: 60.74 inches.

Layout: Two 5 x 5 Latin Squares.

Manurial treatment: The plant canes received 25 tons of pen manure and 3 cwts. sulphate of ammonia to the acre and the ratoons 2 cwts. sulphate of ammonia to the acre.

Yields of Cane (tons per acre)

Variety	Early reaping as plants			Late reaping as plants			Average total 1934-37
	Plants 1934-36	1st R. 1936-37	Total 1934-37	Plants 1934-36	1st R. 1936-37	Total 1934-37	
B.2935 ..	36.56	37.66	74.22	27.27	27.67	54.94	64.58
G.119 ..	35.41	33.86	69.27	25.29	28.45	53.74	61.51
P.O.J.2878 ..	34.31	32.87	67.18	26.52	23.33	49.85	58.52
B.726 ..	25.55	30.67	56.22	22.18	25.47	47.65	51.94
S.C.12/4 ..	27.22	28.82	56.04	23.31	21.43	44.74	50.39

Yields of Sugar (tons per acre)

Variety	Early reaping as plants			Late reaping as plants			Average total 1934-37
	Plants 1934-36	1st R. 1936-37	1934-37 Total	Plants 1934-36	1st R. 1936-37	Total 1934-37	
B.2935 ..	3.54	3.75	7.29	2.79	3.21	6.00	6.65
P.O.J.2878 ..	3.22	3.10	6.32	2.68	2.58	5.26	5.79
G.119 ..	3.01	3.08	6.09	2.45	2.79	5.24	5.67
B.726 ..	2.68	3.17	5.85	2.32	2.86	5.18	5.52
S.C.12/4 ..	2.56	2.79	5.35	2.39	2.27	4.66	5.01

In the ratoon crop B.2935 gave a significantly larger yield of cane than P.O.J.2878, B.726 and S.C.12/4. The yield of this variety also exceeded that of G.119 by 3.80 tons of cane to the acre.

For the two crops B.2935 gave an average total yield of 14.19 tons of cane and 1.64 tons of sugar to the acre more than the standard variety S.C.12/4.

TABLE VI.

Distance of planting in relation to manurial treament.
Area: Dry. Estate: Canada.
Variety: S.C.12/4. Field: Upper Big Pond.
Planted: 9th November, 1935.
Reaped: 5th April, 1937.
Rainfall: 60.44 inches.
Layout: Three 4 x 4 Latin Squares.

Spacing distance within rows.	Manurial treatment per acre		Yield of plant canes, tons per acre.	Gain from closer spacing (t.p.a.)
	Early.	End of dry season		
3 feet	Standard	2 cwts. S/A, 1 cwt. potash	40.17	4.02
4½ feet	dressing	do do	36.15	..
3 feet	of pen	3 cwts. S/A, 1½ cwts. potash	40.14	3.22
4½ feet	manure.	do do	36.92	..

The rows of cane in this experiment were 4½ feet apart. The differences recorded between the yields of cane from the 3 feet and 4½ feet spacings in the row are significant, but no increase in yield was obtained from the larger application of fertilizer.

TABLE VII.

Area: Wet. Estate: Mansion.
Variety: B.H.10(12) Field: Pen.
Planted: 12th December, 1935.
Reaped: 5th May, 1937.
Rainfall: 78.34 inches.
Layout: Three 4 x 4 Latin Squares.

Spacing distance within rows.	Manurial treatment per acre		Yield of plant canes, (tons per acre).	Gain from closer Spacing (t.p.a.)
	Early	End of dry season		
3 feet	2 cwts. S/A, 1 cwt. potash	2 cwts S/A	38.72	3.76
4½ feet.	do.	do.	34.96	..
3 feet	3 cwts. S/A, 1½ cwts. potash	3 cwts S/A	39.42	4.28
4½ feet.	do.	do.	35.14	..

In this experiment, as in the one at Canada, a significant increase in yield was obtained from the close spacing of the cane in the row, but no increase in yield was given by the heavier dose of artificial manures. The distance between the rows was 4½ feet.

TABLE VIII.

Mulching with Megass in relation to manurial treatment.

DRY AREAS.

Estate: West Farm.	College.
Field: Eight Acre.	East Yam.
Variety: B.2935.	S.C.12/4.
Planted: 6th December, 1935.	19th November, 1935.
Mulched: Early March, 1936.	Early March, 1936.
Reaped: 20th February, 1937.	13th April, 1937.
Rainfall: 78 inches.	50.49 inches (Douglas).
Layout: Three 4 x 4 Latin Squares.	Three 4 x 4 Latin Squares.

Megass mulch	Manurial treatment per acre		Yield of Plant Canes (tons per acre)	
	Immediately before application of megass	Before end of dry season	West Farm	College
2–3 ins. every row	1 cwt S/A	3 cwts S/A	62.06	40.96
do.	1 cwt S/A, 1 cwt potash	3 cwts S/A	61.38	43.66
nil	1 cwt S/A	3 cwts S/A	57.26	42.12
nil	1 cwt S/A, 1 cwt potash	3 cwts S/A	63.26	38.76

TABLE VIII (a)

Potash per acre	West Farm		College	
	Treatment with megass.		Treatment with megass.	
	2–3 in. mulch	nil	2–3 in. mulch	nil
1 cwt. ..	61.38 (t.p.a.)	63.26	43.66 (t.p.a.)	38.76
nil ..	62.06	57.26	40.98	42.12
Gain from potash	— 0.68	6.00	2.70	— 3.36

In this experiment a significant increase in yield was obtained at West Farm from the use of a mulch in the absence of potash, while at College mulching gave an increased yield only when combined with an application of potash.

In both experiments all the plots received a basal dressing of pen manure of approximately 25 tons to the acre.

TABLE IX.

Supplementary treatment of pen-manured soils.

Area: Dry.	Area: Wet.
Estate: Needsmust.	Molineux.
Field: Deep Hole.	Andoe.
Variety: S.C. 12/4.	B.H.10(12).
Planted: 29th November, 1935.	4th November, 1935.
Reaped: 1st March, 1937.	11th March, 1937.

Basal manurial treatment: All plots were given an application of 25 tons pen manure to the acre as an early dressing.

Layout: One 6 x 6 Latin Square at each site.

S/A per acre		Potash per acre	Yield of plants (t.p.a.)	
Jan. 1936	June 1936.	Jan. 1936	Needsmust	Molineux
Nil	2 cwts.	Nil	27.34	39.75
Nil	3 cwts.	Nil	28.74	38.74
1 cwt.	2 cwts.	Nil	26.25	41.47
1 cwt.	3 cwts.	Nil	28.24	38.47
1 cwt.	2 cwts.	1 cwt.	28.41	39.72
1 cwt.	3 cwts.	1 cwt.	27.38	40.46

Differences in yield cannot be established as statistically significant.

TABLE X.

Manurial treatment of unpenmanured upper lands.

Area: Wet.
Estate: Belmont.
Field: Middle Mountain.
Planted: 15th October, 1935.
Reaped: 24th March, 1937.
Variety: B.H.10(12).
Rainfall: 117.86 inches.
Layout: One 6 x 6 Latin Square.
Basal manurial treatment: All plots received 1 cwt. superphosphate of lime to the acre as an early dressing.

Manurial treatments per acre.			Yield of plant canes (tons per acre)
Sulphate of Ammonia.		Muriate of Potash	
23 Dec., 1935	10 June, 1936	23 Dec., 1935	
2 cwts.	2 cwts.	Nil	26.23
3 cwts.	3 cwts.	Nil	27.76
2 cwts.	2 cwts.	1½ cwts.	29.86
3 cwts.	3 cwts.	1½ cwts.	31.70
2 cwts.	2 cwts.	3 cwts.	30.01
3 cwts.	3 cwts.	3 cwts.	33.00

TABLE X (a)

Potash.	Sulphate of Ammonia.		Gain from additional 2 cwts. S A (t.p.a)
	4 cwts.	6 cwts.	
Nil	26.23	27.76	1.53
1½ cwts.	29.86	31.70	1.84
3 cwts.	30.01	33.00	2.99
Gain from potash t.p.a.)	3.71	4.59	

TABLE X (b)

Muriate of Potash per acre.	Average yield of plant canes (tons per acre)	Average gain from potash (t.p.a.)
Nil	27.00	—
1½ cwts.	30.78	3.78
3 cwts.	31.50	4.50

In this experiment the average gain from the use of potash was somewhat over 4 tons of cane per acre. The soil of the experimental area contains 53 parts per million of exchangeable potash as K20 and is deficient in exchangeable lime.

Under the conditions of this experiment 6 cwts. sulphate of ammonia when used in conjunction with 3 cwts. of potash to the acre gave a significant increase in yield of cane over an application of 4 cwts. to the acre.

TABLE XI.

Area: Dry.
Estate: West Farm.
Field: Wind Mill, Johnsons.
Planted: 10th September, 1935.
Reaped: 7th May, 1937.
Variety: B.H.10(12).
Rainfall: 94.83 inches.
Layout: One 6 x 6 Latin Square.
Basal manurial treatment: All plots received 1 cwt. superphosphate of lime to the acre as an early dressing.

Manurial treatment per acre			Yield of plant canes (tons per acre.)
Sulphate of Ammonia.		Muriate of Potash.	
7 Nov., 1935	12 June, 1936	7 Nov., 1935.	
2 cwts.	2 cwts.	Nil.	25.80
2 cwts.	3 cwts.	Nil	28.25
2 cwts.	2 cwts.	1 cwt.	29.76
2 cwts.	3 cwts.	1 cwt.	30.27
2 cwts.	2 cwts.	2 cwts.	29.89
2 cwts.	3 cwts.	2 cwts.	31.15

TABLE XI (a)

Potash	Sulphate of Ammonia.		Gain from additional 1 cwt. S/A
	4 cwts.	5 cwts.	(t.p.a.)
	(t.p.a.)	(t.p.a.)	
Nil	25.80	28.25	2.45
1 cwt.	29.76	30.27	0.51
2 cwts.	29.89	31.15	1.26
Gain from potash	4.03	2.46	

TABLE XI (b)

Muriate of potash per acre	Average yield of plant canes (tons per acre)	Average gain from potash (t.p.a.)
Nil	27.02	—
1 cwt.	30.08	3.00
2 cwts.	30.52	3.50

Again an increase in yield has been obtained from the use of potash in an upper land field, the average gain amounting to 3¼ tons of canes to the acre. The optimum economic early dressing of potash to plant canes under the conditions of the experiment would appear to be in the region of 1½ cwts. to the acre.

TABLE XII.

Potash treatment of unpenmanured soils.

Area:	Drier Upper Lands.	Wet Upper Lands.
Estate:	Buckleys.	Estridge.
Field:	Pasture.	Julius Bell.
Variety:	B.H.10(12).	B.H.10(12).
Planted:	7th October, 1935.	16th October, 1935.
Reaped:	4th February, 1937.	28th April, 1937.
Rainfall:	78 inches.	105.69 inches.

Layout: One 6 x 6 Latin Square at each site.

Muriate of Potash per acre	Buckleys	Estridge
	Yield of plant canes (tons per acre)	Yield of plant canes (tons per acre)
1 cwt.	30.20	35.64
2 cwts.	30.78	35.98

The additional gain in yield resulting from the heavier dressing of potash cannot be established as statistically significant.

All plots were given 6 cwts. sulphate of ammonia and 1 cwt. superphosphate of lime to the acre.

TABLE XIII.

Area: Wet. Estate: Molineux.
Variety: B.H.10(12).
Planted: 19th Sept., 1934.
Reaped: As plants 31st March, 1936, as ratoons 13th April, 1937.
Rainfall on ratoons: 77.50 inches.
Layout: Randomised blocks.

Muriate of Potash per acre	Yield of cane tons per acre		
	Plants	1st R.	Total
1 cwt.	36.18	26.90	63.08
Nil	32.80	22.21	55.01
Gain from Potash	3.38	4.69	8.07

TABLE XIV.

Effect of Potash on yield of plant and first ratoon canes in a wet area of the upper lands.

Area: Wet. Estate: Mount Pleasant.
Variety: B.H.10(12) Field: East Negro House.
Planted: 2nd November, 1934.
Reaped: As plants 6th May, 1936, as ratoons 28th May, 1937.
Layout: Seven randomised blocks.
Manurial treatment: As plants all plots received 6 cwts. sulphate of ammonia and 2 cwts. superphosphate of lime. As ratoons all plots received cwts. sulphate of ammonia and 1 cwt. superphosphate of lime.

Muriate of Potash per acre					Yield of cane tons per acre			
At planting	Ten weeks later	Total dressing	Dressing to 1st R.	Total dressing plants & 1st R.	Plants	1st R.	Total	Gain in yield from potash (t.p.a.)
Nil	Nil	Nil	Nil	Nil	22.04	6.91	28.95	—
1 cwt.	Nil	1 cwt.	1 cwt.	2 cwts.	27.69	10.63	38.32	9.37
Nil	2 cwts.	2 cwts.	2 cwts.	4 cwts.	28.28	11.07	39.35	10.40
1 cwt.	2 cwts.	3 cwts.	Nil	3 cwts	30.06	11.74	41.80	11.85

The average total gain from the dressings of potash amounted to 10½ tons cane per acre. The highest total gain is recorded from the dressing of 3 cwts. of potash to the acre to the plant canes, but the differences between yields from dressings of different sizes are not significant.

TABLE XV.

Effect of Potash on the yield of plant and ratoon canes in a pen-manured area of the lower lands.

Area: Wet — Estate: Willetts.
Variety: B.H.10(12) — Field: Watch House.
Planted: 4th October, 1934.
Reaped: As plants 12th March, 1936, as ratoons 27th April, 1937.
Rainfall on ratoons: 91.50 inches.
Layout: Three 4 x 4 Latin Squares.
Manurial treatment: The plant canes received a basal dressing of 25 tons of pen manure to the acre and 6 cwts. sulphate of ammonia and 2 cwts. superphosphate of lime to the acre. All plots of the ratoon canes received a dressing of 3 cwts. sulphate of ammonia to the acre.

Muriate of Potash per acre to plant canes.		Yield of cane tons per acre			Average total gain
At planting	7 weeks later	Plant canes	1st R.	Total	(t.p.a.)
Nil	Nil	37.31	36.09	73.40	..
1 cwt.	Nil	37.29	36.91	74.20	
Nil	2 cwts.	37.69	37.08	74.77	1.27
1 cwt.	2 cwts.	38.26	36.78	75.04	

In the ratoon canes the dressing of potash given to the plant canes showed a small residual effect, but the increase in yield (0.83 tons of cane per acre) is not statistically significant. The dressing of pen manure appears to have contained sufficient available potash for the requirements of the plant and first ratoon crops. The results of this experiment confirm the results of a similar experiment carried out some years previously on Molineux estate.

TABLE XVI.

Pen Manure, Inorganic Manures and Mulching.

Area: Dry. — Estate: Buckleys.
Variety: B.2935. — Field: Copper.
Planted: 5th November, 1935.
Mulched: 10th February, 1936.
Reaped: 10th February, 1937.
Rainfall: 72 inches.
Layout: Three 4 x 4 Latin squares.

Treatment per acre	Yield of plant canes (tons per acre)	Diff.
Pen Manure, approx. 28 tons	63.28	—
Pen manure and 2 cwts. S/A	64.96	1.68
5 cwts. S/A, 1½ cwts. potash	57.92	5.36
5 cwts. S/A, 1½ cwts. potash with 2–3 inch mulch of megass	61.52	1.76

The treatment with pen manure has led to a large and significant increase in yield over the treatment with inorganic manures.

TABLE XVII.

Pen Manure and Artificials.

Area: Wet. Estate: Molineux.
Variety: B.H.10(12). Field: Andoe.
Pen Manured: Under centres, 2nd December, 1935.
Planted: 5th December, 1935.
Reaped: 16th March, 1937.
Rainfall: 91 inches.
Layout: Four 3 x 3 Latin squares.

Manures per acre	Yield of plant canes (tons per acre)
Pen Manure, 28 tons	38.28
Pen Manure & 4 cwts. S/A	40.58
6 cwts. S/A and 1½ cwts. potash ..	33.94

In this experiment pen manure has again given a significantly higher yield than the artificials.

TABLE XVIII.

Optimum size of dressing of Pen Manure.

Area:	Dry.	Intermediate rainfall.
Estate:	Douglas.	Stapleton.
Field:	Cayon.	Cellar Door.
Variety:	S.C.12/4.	B.H.10(12)
Planted:	6th November, 1935.	27th November, 1935.
Reaped:	21st May, 1937.	10th May, 1937.
Rainfall:	83.09 inches.	90.67 inches.
Layout:	Three 4 x 4 Latin squares.	Three 4 x 4 Latin squares.

Pen Manure per acre	Douglas		Stapleton	
	Yield of cane tons per acre	Gain t.p.a.	Yield of cane tons per acre	Gain t.p.a.
Nil	30.04	..	32.10	..
10 tons	33.11	3.07	36.30	4.20
20 tons	33.15	3.11	37.09	4.99
30 tons	35.98	5.94	38.29	6.19

All plots at Douglas were given a dressing of 2 cwts. sulphate of ammonia and those at Stapleton a dressing of 4 cwts. sulphate of ammonia.

Significant gains in yield were given by the three dressings of pen manure, the largest increase in yield being recorded from the dressing of 30 tons to the acre. The dressing of pen manure in general use in St. Kitts is approximately 25 tons to the acre.

TABLE XIX.

Effect of cross holing on the yield of plant and first ratoon canes.

Area: Wet. Estate: Mansion.
Variety: B.H.10(12). Field: Big Saddlers.
Planted: 23rd October, 1934.
Reaped: As plant canes 25th March, 1936 and 1st Ratoons 7th April, 1937.
Rainfall on ratoons: 67.86 inches.
Layout: Eight randomised blocks, each treatment being repeated twice in each block.
Manurial treatment: As plants: 25 tons pen manure, 6 cwts, sulphate of ammonia and 1 cwt. muriate of potash to the acre.
As ratoons: All plots received 3 cwts. sulphate of ammonia to the acre and half of the plots 1½ cwts. of muriate of potash to the acre.

Treatment	Yield of cane (t.p.a.)		
	Plant canes	First ratoons	Total
Open furrows	40.21	41.18	81.39
Cross holes	39.45	41.74	81.19

There is no significant difference in yield to be recorded.

TABLE XX.

Effect of chiselling the tarish of an upper land field on the yield of plant and first ratoon canes.

Area: Wet. Estate: Molineux.
Variety: B.H.10(12). Field: Wash.
Planted: 19th September, 1934.
Reaped: As plant canes 31st March, 1936, as 1st ratoons 13th April, 1937.
Rainfall on ratoons: 77.50 inches.
Layout: Eight randomised blocks, each treatment being repeated twice in each block.
Manurial treatment: As plants all the plots received 6 cwts. sulphate of ammonia and half of the plots 1 cwt. muriate of potash to the acre.
As ratoons all plots received 3 cwts. sulphate of ammonia to the acre and all the plots that had received potash in the plant canes were given an additional 1 cwt. muriate of potash.

Treatment of tarish (in plant cane crop)	Yield of cane (t.p.a.)		
	Plant canes	First ratoons	Total
Chiselled	34.46	25.66	60.12
Nil	34.52	23.46	57.98

The differences in the above yields are not statistically significant.

TABLE XXI.

Effect of mulching with megass on the yield of plant and first ratoon canes.
Area: Dry. Estate: Needsmust.
Variety: B.H.10(12) Field: Old Yard Jib.
Planted: 19th October, 1934.
Reaped: As plants 1st March, 1936, as ratoons 20th April, 1937.
Rainfall on ratoons: 71.33 inches.
Layout: Two 5 x 5 Latin squares.
Manurial treatment: As plant canes each plot was given a dressing of 6 cwts. sulphate of ammonia and 1 cwt. muriate of potash to the acre. As ratoons each plot received 3 cwts. sulphate of ammonia to the acre.

Treatment with megass		Yield of cane (tons per acre)			Gain from mulching
Thickness of Mulch	Method of spreading	Plants	1st R.	Total	(t.p.a.)
Nil		15.20	11.65	26.85	..
2 inches	Alternate rows	17.57	17.71	35.28	8.43
3 „	„	16.73	16.55	33.28	6.43
2 inches	Every row	18.26	18.72	36.98	10.13
3 „	„ „	18.62	20.98	39.60	12.75

In the ratoon canes the unmulched plots suffered from much weed growth and many stools did not come back, which resulted in a very low yield from the plots without mulch.

The total average gain in yield of 9.44 tons of cane per acre due to mulching with megass is statistically significant. Mulching on alternate banks resulted in an average total gain of 7.43 tons cane per acre. There is nothing to choose between the effects on total yield of plants and first ratoons of mulches two inches and three inches in thickness.

TABLE XXII.

Effect of early and late dressings of sulphate of ammonia on yield of first and second ratoons.

Area: Dry.
Estate: Caines.
Variety: B.H.10(12).
Reaped as plants: 15th May, 1935.
Reaped as 1st R.: 15th May, 1936.
Reaped as 2nd R.: 27th May, 1937.
Rainfall on 2nd R.: 88.61 inches.
Layout: Two 5 x 5 Latin squares.

Sulphate of Ammonia per acre in 1935.		Yield of Canes (tons per acre)		
Mid July	Early Oct.	1st R.	2nd R.	Total
Nil	Nil	34.72	25.96	60.68
2 cwts.	Nil	37.38	27.43	64.81
3 cwts.	Nil	38.49	27.91	66.40
2 cwts.	2 cwts.	37.04	28.70	65.74
3 cwts.	2 cwts.	37.05	28.19	65.24

The yields of the second ratoon canes show the residual effect of the dressings of sulphate of ammonia applied to the first ratoons.

APPENDIX II.

The following table shows the quantities, in long tons, of artificial manures and crushed limestone imported into St. Kitts during the five year period 1933—1937.

Year	Sulphate of Ammonia	Muriate of Potash	Superphosphate of Lime	Mixed Manures (complete)	Humber Compound Fish Manure	Crushed Limestone
1933 ..	880	38	—	56	105	—
1934 ..	1,118	116	—	64	16	—
1935 ..	1,652	235	66	17	55	—
1936 ..	1,120	273	203	96	45	258
1937 ..	1,276	481	250	28	85	222

APPENDIX III.

LAND SETTLEMENT, NEVIS.

The Land Settlements continue to make fairly good progress, and the situation with regard to the instalments is very much more satisfactory.

The cane nurseries have been maintained, and they serve not only as a source of supply of plants of the best varieties of canes, but also as demonstration plots for approved methods of cultivation and care of the growing crops. The standard of cultivation on the settlements has much improved and is superior to the ordinary peasant cultivation of the island.

The cane nursery plots for 1938 plants were all planted during November and the plants have germinated well.

The following is a list of plants, seeds, etc., distributed during the year.

	Hamilton	Low Ground
Cane plants	164,840	61,050
Onion Seedlings	204,750	73,400
Tomato Seedlings	211,350	28,350
Cabbage do.	400	—
Egg Plant do.	650	200
Selected Cotton Seed lb.	2,750	1,290
Seed Corn lb.	22	4
Peas and Beans, lb.	11	5
Sweet Potato Cuttings	—	60
Cassava cuttings	70	150
Yams lb.	90	80
Banana Slips	134	—
Grafted Mangoes	2	5
Budded oranges	—	2

APPENDIX IV.

GOVERNMENT MARKETING DEPOT, NEVIS.

Report of the Officer-in-Charge (Agricultural Instructor).

The Government packing house was opened for operations on October 25th, and the first shipment was made on November 2nd. The last shipment was made on December 14th, 1937.

The total quantity of tomatoes shipped was 778 crates—768 crates to Canada and 10 to Bermuda.

An advance to the growers of one cent per lb. was made on exportable tomatoes.

During the season eighty-four growers supplied tomatoes to the packing house and the total quantity received was 17,194 lbs. of which 15,988 lbs. were exportable giving 7% culls which is 8% lower than that of last season.

All of the shipments to Canada were made to St. John and the nett price to the growers was on an average of 3—4 cents per lb.

The following tables show details of shipments and the results of the seasons operations.

Date of Shipment	Weight of tomatoes exported.	Net price per lb.
November 2nd	5,749 lbs.	3.6 cents
November 16th	7,103 „	2.9 „
November 30th	2,777 „	4.4 „
December 14th	359 „	4.9 „
	Receipts	Expenditure
Net proceeds account sales	£214 4 1	
Packing house expenses		£13 7 6
Packing material, crates etc.		32 0 3
Packing house levy		6 12 10
Cold storage		1 3 5
Porterage and lighterage		4 2 4
Truckage		11 1
Telegrams		11 3
Freight		45 13 5
Advance on tomatoes		33 6 0
Sundry Supplies		14 8
Bonus to growers		65 2 5
Carried forward		10 18 11
	£214 4 1	£214 4 1

APPENDIX V.

REPORT ON THE PURCHASING OF PEASANTS' COTTON IN NEVIS.

(By the Agricultural Instructor, Nevis).

The purchasing of cotton was undertaken on similar lines as in the past. An advance at the rate of six cents per lb. was paid on all clean Sea Island Cotton delivered at the cotton house.

The total quantity of seed cotton purchased was 217,104 lbs. and the amount of lint obtained from it 58,649 lb. with an average of 27.1% lint to seed cotton for the season.

The lint was shipped to the British Cotton Growing Association in 123 bales. A very satisfactory report as regards the quality of the cotton was received from the Brokers and the whole crop was valued at 23d. per lb. Some of the cotton was sold at 21d., but the greater part of it is still unsold.

The cotton seed was sold to Spooners Factory, St. Kitts, except a supply of the best which was kept for planting.

The Government also marketed stained cotton. An advance of 1 cent per lb. was paid on stained cotton delivered at the cotton house. The total quantity purchased was 10,505 lb. and the stained lint obtained from it was 2,675 lb. with an average of 25.4% lint to seed cotton.

The stained cotton was shipped to the B.C.G.A. in bales, but at the end of the year there had been no sales.

APPENDIX V. (a)

GOVERNMENT GINNERY.

Ginning operations started on March 11th and ceased on June 17th, 1937.

The total quantity of seed cotton ginned was 264,195 lb. clean, 14,850 lb. stained which gave 72,162 lb. of clean and 3,766 lb. of stained lint. The average percentage of lint to seed cotton was 27.3 for clean and 25.3 for stain.

The following shows details of the seed cotton ginned:—

Owner	Seed Cotton		Lint		Bales	
	Clean	Stain	Clean	Stain	Clean	Stain
Government.	214,942	10,505	58,649	2,675	123	6
Local purchasers of seed cotton ..	49,253	4,345	13,513	1,091	29	3
	264,195	14,850	72,162	3,766	152	9

The cotton seed was all disposed of before August 31st. and the ginnery was thoroughly cleaned up in accordance with regulations.

APPENDIX VI.

REPORT OF THE COMMITTEE ON TRANSPORT OF SUGAR-CANE PRODUCED IN NEVIS.

The Committee held two meetings on the 25th March and the 1st April. Mr. Skeete, Assistant Commissioner of Agriculture, attended the first meeting by invitation.

On the 30th March the Assistant Commissioner of Agriculture and the Agricultural Superintendent interviewed the following gentlemen in Nevis:— Mr. H. L. King of Messrs. Wildy & Co., Hon. W. B. DeGrasse and Mr. Claude Laurence of Hamilton Estate. These interviews provided the Committee with some useful information but none of the gentlemen were able to offer any practical suggestions for the improvement of the present arrangements for the internal transport of canes in Nevis or for their transport by sea from Nevis to St. Kitts.

The Committee has carefully considered the statements of the Commissioner of Agriculture in his letter No. 99/37 of the 1st February to his Excellency the Governor, paragraphs 9 to 12.

Cost of transport of canes to weighbridges.

The Committee does not consider that the Ramp system (Commr's letter par. 10) of cane transport, which is worked successfully in Jamaica, is suitable for use under the conditions of cane growing on small scattered peasants' plots in Nevis. In this connection the Committee was fortunate in being able to obtain the views of Mr. C. Connell, Chief Engineer of the St. Kitts (Basseterre) Sugar Factory, who introduced and developed the system in Jamaica.

The present cost of transporting canes by motor truck in Nevis is 8d. per ton per mile loaded, which is 4d. per ton per mile travelled by the truck. The Committee found that this charge compares very favourably with the cost to the St. Kitts estates for the transport of canes from the fields to the railway sidings and is of the opinion that the present cost in Nevis would not be reduced by the introduction of any of the suggestions that were proposed for consideration by the Committee.

Transport of Canes from Nevis to St. Kitts.

The Committee is of the opinion that the present method of transporting canes from Nevis to St. Kitts by large sailing boat is cheap and efficient. The possibility of using a tug for towing several large barges was considered by the Committee but it was agreed that this method would probably be more expensive and that it was very likely that such a system would break down during moderately rough weather in the channel between Nevis and St. Kitts. This method of sea transport for canes was thoroughly tested in St. Kitts by the St. Kitts (Basseterre) Sugar Factory some years ago and did not prove a success.

The Committee is therefore unable to recommend the expenditure by Government of £4,000 to £5,000 (Commr's letter par. 12) in connection with the transport of the small quantity of sugar cane which is at present being produced for delivery to the factory in St. Kitts.

Furthermore it is difficult to see how the cost of suitable transport facilities can be so reduced as to enable the peasant in Nevis to obtain for his canes a price equal to or better than the price at present obtained by the peasant grower in Trinidad, St. Lucia and Antigua, if it is remembered that the peasant in Nevis has to pay for a haulage equivalent to about 14 miles (11 miles by sea and 2 to 3 miles on land), while in the islands referred to above the haulage paid for by the grower is probably not more than 1 to 3 miles. It appears to the Committee that the only possibility of the Nevis peasant obtaining 12/- or 12/6 per ton for canes supplied to the St. Kitts factory is if either the internal transport or the transport from Nevis to St. Kitts is provided for him free of cost.

General Recommendations.

The Committee very much regret that it has been unable to offer any practical suggestions for reducing the present transport costs of Nevis canes, but would like to offer the following recommendations for consideration by Government.

Shipping Facilities.

The Committee is of the opinion that the provision of shipping facilities for canes at Jones' bay should be undertaken by Government. A jetty at this bay would probably increase cane production in this locality and the transport cost of these canes should be less than the present cost to many growers in other districts of the island.

The jetty at Newcastle should be improved. At present there is often difficulty in loading boats there owing to the shallowness of the water alongside the jetty.

The concentration of canes growing close to the shipping points would help to reduce the cost of internal transport.

Increased Production.

The Committee is of the opinion that assistance should be given to the peasant to increase his yield per acre and to produce canes of better quality. (The Chairman informed members that supplies of planting material of the newer and better cane varieties were now available to the peasants in Nevis from cane nurseries established by the Agricultural Department).

It was thought that Government should consider the question of supplying artificial manures to the peasants in the same way adopted with insecticides for cotton. Members were of the opinion that, by a simple agreement, the cost of the manures could be recovered by Government from the marketing agency in Nevis for peasants' canes.

The Committee is of the opinion that an increased production is one of the factors that is likely indirectly to affect beneficially the peasants' transport costs of canes.

(Sgd.) R. E. KELSICK,
Agricultural Superintendent,
Chairman.

(Sgd.) B. B. DAVIS,
Member.

(Sgd.) A. C. EVELYN,
Member.

(Sgd.) C. A. L. SHEPHERD
Member.

7th April, 1937.

APPENDIX VII.

RAINFALL RETURN FOR ST. KITTS FOR YEAR 1937.

Station	January	February	March	April	May	June	July	August	September	October	November	December	Total
Wingfield ...	11.02	3.44	2.34	2.83	1.53	3.22	3.48	8.59	6.38	7.78	4.38	3.33	58.32
Lamberts ...	13.09	3.20	2.05	2.30	1.68	3.63	3.09	7.83	4.49	6.71	2 74	6 72	57.53
Parsons ...	9·22	2.25	1.68	4.20	6.67	1.82	3.08	4.64	6.16	6.93	7.04	2 97	56.66
Caines ...	8.50	2.92	1.12	4.96	4.90	2.66	2.39	6.25	4.42	9.93	3.89	2.62	54.56
Willets ...	9.45	3.10	0.65	2.62	4.70	2.80	1.95	5.60	4.21	6.62	8.43	2.93	53.06
Belle Vue ...	7.49	3.57	1.57	6.91	4.28	1.81	2.20	5.88	3.55	10.45	2.52	2.12	52.35
Milliken ...	10.73	2.50	3.10	4.18	1.63	2.81	2.66	5.41	5.58	5.47	3.43	3.15	50.65
Shadwell ...	9.57	2.93	2·44	1.69	2 16	2.00	1 85	6.88	8.15	7.12	3 30	2.24	50.35
Lodge ...	8.37	2.47	2.36	4.22	3.82	0.70	1.64	5.14	3.31	10.99	3.83	2.46	49.31
Sir Gillies ...	11.40	4.00	1.65	1.40	2.40	2.49	1.31	6.30	5.15	6.30	2 10	4.70	49.20
Estridge ...	8.64	2.99	2.01	3 86	3.60	1.18	1.16	6.49	4 03	9.86	2.76	1.97	48.55
Molineux ...	6.23	2 87	2.61	3·62	3.74	1.27	1.52	5.09	4 77	9.80	4 34	2.18	48.04
Mansion ...	7.15	2.20	1.95	2.95	4.10	1.35	1.07	6.00	4.12	11.96	3.40	1.45	47,70
Fountain ...	8.92	4.18	2.61	4.97	1.65	0.98	1.86	5.00	5.28	5.54	1.40	4.75	47.14
Stapleton ...	8.70	2.96	2.42	5.35	1.68	1.44	1.73	6.08	3.83	6.19	3 40	2.66	46.44
Belmont ...	9.50	3.00	1.57	1.61	3.16	2.56	2.02	5.84	3.48	4.90	5.59	3.07	46.30
Bourkes ...	10 44	2.12	1.24	2.22	2·04	2.77	2.13	7.28	4.15	6.85	2.27	2,14	45.65
Brighton ...	7·88	1.99	2.34	4.45	3.65	1.25	1.52	3.57	2.73	10.96	2.46	2.02	44.82
Con Phipps ...	9·39	1.28	1.14	2.43	1.88	3.32	2.52	7,75	3 02	5.35	3 63	2.22	43.93
Lower Bourryeau	7·06	2.23	1.93	3.27	3.73	1.32	1.49	5.18	2.53	10.53	2.68	1.52	43.47
Cranstouns ...	11·16	2.22	1.98	1.28	1.78	2.47	1.79	7.21	1.90	5.91	3.26	2.31	43.27
La Guerite ...	8·01	2.61	2.00	2.16	1.25	2.41	2.10	5.59	5.46	6.22	3.57	1.75	43.13
West Farm ...	8·36	2.71	1.75	2.10	1.41	2.14	2.19	6.75	4.51	5.85	3.34	1.81	42.92
Olivees ...	6·99	2.41	2,03	2.07	1.33	2.37	1.87	5 00	7.68	6.72	2 52	1.85	42.84
Farm ...	10·22	2.25	1.85	2.05	2.10	1.20	1.35	5.62	3.97	5 80	2.35	3.65	42.41
Stone Fort ...	8 12	3.36	2.04	1.67	1,53	2,93	1.57	6.15	5.30	3.97	2.11	3.32	42.07
Buckleys ...	7·97	2.56	1.75	1.98	1.36	2.12	1.90	5.16	5.71	6.05	3 15	1.85	41.51
Pond ...	11·90	1.15	2,20	2.23	1.30	1.92	1.48	4.26	3.41	6.45	2.27	2.71	41.28
Mills ...	6 02	1.82	2.08	3.16	3.80	1.31	1.65	5.07	2.33	10.12	2.57	1,31	41.24
Camp ...	8.25	2.36	1.53	2.00	1·09	1.81	1.51	5.87	6.26	5.35	2.69	1.56	40,28
Hermitage ...	9·11	1.66	1.64	2.53	3.40	0.50	0.83	3.86	1.85	11.76	2.24	0.85	40.23
Needsmust ...	10.55	1.60	2.20	2.38	1.10	2.40	1.55	4,90	4.15	4.95	1.05	3.00	39.83
St. Kitts Factory	7.90	2.07	1.88	2.14	1.18	2.62	1.90	4.86	4 36	5.88	2.54	1.49	38 82
Cunningham ...	6.36	1.10	1.55	3.65	2.09	1.29	1.13	3.55	2.07	11 01	2 69	1.52	38.01
Douglas ...	7.30	2.25	1.95	2 60	1.55	2.00	1.40	3.08	4.05	5.50	2 25	1.75	35.68
Bothersons ...	6.24	2.21	1.67	0 79	2.14	2.24	1.35	5.10	2 57	3.05	5.42	2.07	34.85
Canada ...	5.21	1.21	1.40	4.07	2.23	1.52	0.97	4.61	1.58	7.35	2.93	1 07	34.12
Frigate Bay ...	6.36	1.19	1.53	2.72	1.11	1.32	0.95	4.52	1.84	4.39	0.86	2.07	28.86

AVERAGE RAINFALL 1914—1937.

In 1914 the average rainfall on 31 Stations was 52.92 in.

1915	„	32	„	75.59 „
1916	„	35	„	69.51 „
1917	„	33	„	43.53 „
1918	„	30	„	52.44 „
1919	„	29	„	62.84 „
1920	„	28	„	37.13 „
1921	„	29	„	47.09 „
1922	„	33	„	44.84 „
1923	„	30	„	34.58 „
1924	„	28	„	68.13 „
1925	„	32	„	43.54 „
1926	„	27	„	62.57 „
1927	„	29	„	64.36 „
1928	„	29	„	53.25 „
1929	„	28	„	52.55 „
1930	„	31	„	45.98 „
1931	„	31	„	57.60 „
1932	„	33	„	77.27 „
1933	„	36	„	63.97 „
1934	„	38	„	55.34 „
1935	„	39	„	48.89 „
1936	„	38	„	63.12 „
1937	„	37	„	44.78 „

The average rainfall for 24 years is 55.07 inches, so that the rainfall for the year 1937 is 10.29 inches below the average.

AVERAGE MONTHLY RAINFALL.

	1937	1914—1937
	Inches	Inches
January	8.65	3.48
February	2.43	2.04
March	1.89	2.41
April	2.91	3.63
May	2.46	4.04
June	2.02	3.98
July	1.81	5.07
August	5.56	5.49
September	4.17	6.34
October	7.21	6.67
November	3.21	7.09
December	2.46	4.55

Latitude 17° 20′ N. METEOROLOGICAL REPORT FOR 1937. Heights above M.S.L. Barometer 157 feet

Longitude 62° 45′ W. AGRICULTURAL DEPARTMENT, ST. KITTS. Rain Gauge 152 „

Months.	Barometric Pressure reduced to Sea Level, 32° Fahrenheit and corrected for gravity.					Temperatures °F								Vapour Pressure ins. of Mercury			Relative Humidity per cent.			Inches Rainfall	No. of days on which rain fell
	9 a.m	3 p.m.	Mean	Highest	Lowest	Maximum Means	Minimum Means	Maximum Extreme	Minimum Extreme	Mean for Month	Range for Month	Dew Point 9 a.m.	Dew Point 3 p.m.	9 a.m.	3 p.m.	Mean	9 a.m	3 p.m.	Mean		
	Inches																				
January	30.045	29.978	30.011	30.132	29.873	79.5	70.6	81	68	75.1	13	67·2	67.6	·668	·677	·673	70·8	73 4	72·1	8·01	19
February	30.069	29.979	30.024	30.101	29.919	79 0	70.0	82	65	74·5	17	70.4	66.6	·733	·665	·699	74·1	68·7	71·4	2·61	15
March	30.023	29.964	29 993	30.107	29.916	81.8	71.7	84	69	76.7	15	68.8	68.8	·710	·703	·707	73·1	68·3	70·7	2 00	15
April	30.021	29.958	29.989	30.127	29.883	82.9	72.8	85	69	77.8	16	68.2	68.8	·704	·713	·709	70 5	66·4	68·5	2·16	17
May	29.997	29 939	29.968	30.048	29.872	84.9	74.6	87	72	79.7	15	72.4	72 0	·792	·792	·792	71·7	67·4	69 5	1·25	6
June	30.033	29.999	30.006	30.089	29.920	86.6	76.9	87	73	81.7	14	72.8	72.6	810	·813	·812	69·7	69·4	69·6	2·41	11
July	30.026	29.980	30.003	30.121	29.931	87.4	77.4	89	75	82.4	14	72.4	73.8	810	·831	·821	69·0	68 2	68·6	2·10	15
August	29.989	29.930	29.959	30.068	29.849	87·0	77.0	89	74	82 0	15	73.8	75.0	·840	·878	859	71·5	69·4	70·4	5·59	18
September	29.929	29.878	29.903	30.008	29.833	87.0	76.6	90	74	81.8	16	74.8	74.4	·864	·863	·864	73·1	71·4	72·3	5·46	19
October	29.930	29.872	29.901	29.991	29.841	85.5	75.8	88	73	85.6	15	73.8	74.8	·846	·875	·861	76·5	75·0	75·7	6·22	18
November	29.913	29.832	29.872	29.996	29.671	85.0	75.5	87	73	80.2	14	73.0	72.8	·825	·810	·818	75·0	71·2	73·1	3·57	16
December	29.964	29.900	29.932	30.045	29.767	82 4	73.2	84	70	77.8	14	66·6	68 8	·680	·704	·692	69·6	66·4	68·0	1·75	18
Means	29.995	29.934	29.963			84.1	74.3	86.0	71.0	79.6	14.8	71.2	71.3	·774	·777	·776	71·2	69·6	70·8	43·13	187

REMARKS:—Highest Maximum Temperature 90° F on 9th September.
Lowest Minimum „ 65° F „ 4th February.
Highest Barometer (corr.) 30.132 on 19th January.
Lowest Barometer „ 29.671 on 11th November.
Greatest Rainfall in 24 hours. 3.14 inches on 1st January.

METEOROLOGICAL RETURN.

EXPERIMENT STATION, NEVIS.

1937 Month	Rainfall Inches.	No. of days on which rain fell.	Maximum fall for any one day. Inches.
January	10.64	17	3.27 (2nd)
February	1.87	12	0.60 (22nd)
March	2.53	15	0.60 (16th)
April	2.07	10	0.69 (24th)
May	1.59	6	0.70 (21st)
June	2.93	10	0.75 (10th)
July	2.08	14	0.40 (19th)
August	5.83	14	3.04 (9th)
September	4.26	9	1.52 (20th)
October	4.10	15	0.62 (16th)
November	4.82	12	1.16 (29th)
December	3.59	11	1.11 (28th)
Total	46.31	145	

The average rainfall for the past thirty-two years is 49.45 inches.

TEMPERATURES.

Readings of the Maximum and Minimum and the Wet and Dry Bulb thermometers are taken daily at the station at 9 a.m. and at 3 p.m.

The mean temperature for the year was 81.9°F. The mean maximum temperature was 84.6°F., and the mean minimum 74.2°F.

The highest maximum was 90°F. in September and the lowest minimum 59°F. on February 2nd. The mean monthly range was 20.2°.

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